DOCUMENT RESUME

ED 066 376 SO 003 174

AUTHOR	Payette, Roland Francis
TITLE	Development and Analysis of a Cognitive Preference Test in the Social Sciences. Final Report.
INSTITUTION	Illinois Univ., Urbana. Social Science Curriculum Study Center.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Cooperative Research Program.
BUREAU NO	BR-5-0383
PUB DATE	67
CONTRACT	OEC-4-10-058
NOTE	184p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Affective Objectives; Behavioral Objectives; *Educational Objectives; *Evaluation Techniques; Graduate Students; Junior High School Students; Measurement Instruments; Research Needs; Research Projects; *Social Sciences; *Social Studies; Test Construction
IDENTIFIERS	*Cognitive Preference

ABSTRACT

In order to allow for formulating affective objectives in communicable terms, the Cognitive Preference Test in the Social Sciences was developed. This exploratory device, which reflects cognitive preferences in terms of students' dispositions to respond consistently to either particular or general features of data, uses multiple choice wherein 4 options (each representing a different form of cognitive preference) are provided for each of 40 social science principles. To test the 4 study hypotheses, 2 student groups were used: 1) 8th graders (some 7th graders) from the University of Illinois Social Science Curriculum Study Center (SSCSC) Project who had been taught with project-developed materials requiring inductive strategy; and, 2) master's and doctoral candidates in education who were enrolled in a course on social studies curriculum and methods. Results suggested that the test can identity student differences in cognitive preferences within a particular curriculum context. The report of the study provides a conception of cognitive preferences, a step-by-step account of test construction, empirical analyses of the test in terms of such factors as reliability and validity, recommendations for research, a bibliography, a copy of the test, and a description of the SSCSC Project. (GC)

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BR5-0383
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ED 066376

DEVELOPMENT AND ANALYSIS OF A COGNITIVE PREFERENCE TEST IN THE SOCIAL SCIENCES

by ROLAND FRANCIS PAYETTE

1967

SP00 3174

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Final Report, University of Illinois
Project No. HS-085
Contract No. OE 4-10-058

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Development And Analysis Of A Cognitive Preference Test In The Social Sciences

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ACKNOWLEDGMENTS

The author expresses his sincere appreciation to Dr. B. O. Smith, Chairman of the Committee, for his insightful assistance throughout the study, and to Dr. J. T. Hastings and Dr. L. Metcalf for the basic questions they raised as the study progressed. Appreciation is also expressed to the other members of the Committee, Dr. C. B. Hagan and Dr. L. Linsky, for their suggestions and assistance.

A special note of thanks is expressed to Dr. E. C. Leppert, Director of the Social Science Curriculum Study Project Center, and to the Project students, teachers, and administrators who participated in the study. Grateful acknowledgment is made for financial assistance received through Sequential Social Science Courses for the Secondary School, supported by a grant from the U. S. Office of Education (Cooperative Research Project).

Sincere appreciation is expressed to Marilyn Payette whose faith and inspiration enabled this study to be undertaken and completed.

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CHAPTER I

INTRODUCTION

To begin, the need for the development of a variety of evaluation instruments and techniques for the social studies seems to be so clear that it hardly requires extended argument. Nevertheless, some evidence relative to this need will be cited for the purpose of identifying certain dimensions of social studies achievement and evaluation that have been neglected more than others.

In his discussion of the search for dimensions of achievement in the social studies Henry Dyer has suggested that:

> The first major problem for the future of educational measurement is to find ways and means of multiplying the measurable dimensions of educational achievement to the point where they come as close as possible to encompassing all the important categories of behavior that are likely to be acquired inside and outside of the classroom. (10, 41)*

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*References will be indicated by one of two forms, "(a)" or "(a, b)." In this usage "a" refers to an entry in the bibliography and "b" to the page or pages to which reference is made.

The significance of Dyer's statement for evaluation in the social studies is that since we have not yet identified all or most of the dimensions of behavior that might be affected by instruction in the social studies, we have not been in a position to develop evaluation instruments or techniques to assess behavior in these dimensions.

In his discussion of the relationship of the new curriculum ferment to the need for broader evaluation perspectives, J. Thomas Hastings has foreshadowed the point of departure of this study. He states:

> Evaluation has tended to stress the "knowing" and to a lesser extent, the "applying" types of outcomes. The new curriculum projects are stressing higher skills and abilities and are heavily concerned with attitudes, interests, and motivating values. (18, 14-15).

Robert W. Heath has asserted that the distinctive goals of the new curricula require different conceptions of achievement and different methods of measurement. He maintains that:

> Educational testing has attempted, with considerable success, to measure the degree to which students achieve certain educational objectives. An efficient technology has developed to assess what facts and applications the student knows. Achievement tests usually call upon the student to demonstrate his knowledge of terms and facts, to appropriately apply these elements of information, and to

> show his comprehension of organizing schemes. . . . The problem of assessing student progress toward the distinctive goals of the new curricula is not a simple one. The body of psychometric skills now available has largely grown out of traditional educational practices. It seems necessary to approach the problem for a frame of reference which is different in its conception of achievement and therefore different in method of measurement. (19, 240 and 241)

In his analysis of evaluation in the service of course improvement, Lee J. Cronbach has identified important objectives underlying contemporary curricular revision. He concludes that:

> In evaluating today's curricula, it will clearly be important to appraise the student's general educational growth, which curriculum developers say is more important than mastery of the specific lessons presented. . . . The outcomes observed should include general outcomes ranging far beyond the content of the curriculum itself: attitudes, career choices, general understandings and intellectual powers, and aptitude for further learning in the field. (9, 234 and 248)

Commenting on the importance of affective objectives and the need for appropriate measures of these objectives, the authors of the Taxonomy of Educational Objectives: Affective Domain observe that:

> In the original statement of objectives (of several major courses at the general education level of college) there was frequently as much emphasis given to affective objectives as to cognitive objectives. . . . What is missing is a systematic effort to collect evidence of growth in affective objectives which is in any way parallel to the very great and systematic efforts to evaluative cognitive achievement. . . . The

> situation with respect to affective objectives is so primitive that little in the way of meaning is at present conveyed by statements of objectives. (21, 16 and 21)

It should be clear from the above statements by specialists in evaluation and measurement that emerging curricula in the United States are emphasizing dimensions of learning that require new perspectives and methods of measurement. It should also be clear that affective objectives are prominent among the outcomes of concern to curriculum authors.

Now if it is true that little meaning is communicated by contemporary statements of affective objectives, then it would seem necessary at the outset to clarify the meaning of the term "affective objective" or "affective behavior" as it is used in this study. Turning to ordinary language, it may be said that people as a result of their experiences learn to orient themselves toward other people, objects, situations, and symbols. That is, people learn as a result of their experiences to accept, to a degree, certain "things" and to reject, to a degree, other "things."

Consequently, affective behavior might be viewed as that which a person does which emphasizes a degree of acceptance or rejection. However, it is not necessary, and perhaps not even desirable, to view affective objectives solely in terms of behaviors or acts. In this regard, Theodore Newcomb's conception

of attitude is instructive. Newcomb tells us that:

> An individual's attitude toward something is his predisposition to perform, perceive, think, and feel in relation to it. (27, 119)

The implication to be drawn from Newcomb's conception is that affective objectives, which comprehend attitudes, may also be viewed as dispositional. That is, although behavior provides the evidence for inferences about affective states or tendencies, it is the consistency of the behavior that is referred to when we talk about the affective domain. And when we are concerned educationally with affective objectives, we are especially concerned with nurturing dispositions to react in consistent ways rather than with programming for specific behavior in specific situations.

Operational definitions of affective orientations toward specific things will be reserved for later discussion in this study, but for the present it can be said that an affective objective will refer to a person's disposition to react to something in a consistent way.

The Problem

The school's concern with affective objectives is probably as old as the school institution itself. One may, perhaps, illustrate the nature of this concern by reference to the

generic educational process, i.e., socialization. In his analysis of the family, Goode tells us that:

> Socialization is a process in which the person learns how others in his family expect him to behave, and in which he himself comes to feel this is both the right and the desirable way to act. (17, 1)

In brief, socialization is a process in which a person learns certain basic roles and affective orientations toward these roles.

Education may be viewed as an extension of the socialization process in which the person learns formal symbols and ways of symbolic interaction with his world, and in which he develops dispositions to respond in a consistent way to symbols and symbolic forms of interaction. If this line of reasoning is correct, then it would seem that the school's concern for affective objectives is essential.

Assuming that the school is concerned with the development of affective objectives, that curriculum authors view the learning of affective objectives as important, that no systematic attempt has been made to collect evidence of growth in affective objectives, and that affective objectives typically convey little meaning, then the question arises, "How should affective objectives be formulated or expressed?" In brief, the problem is, how shall we formulate affective objectives in communicable terms?

Definition of Terms

It has been indicated earlier that, in general terms, an affective objective will refer to a person's disposition to react to a thing in a consistent way. This conception of affective objectives is consistent with both ordinary and technical usage. However, since it is the purpose of this study to formulate some affective objectives in communicable terms, it will be necessary to inspect the disposition to react to things in context.

Three disciplines have been identified as useful contexts in which to view the disposition to react to things. The first of these disciplines, philosophy of science, deals with the tendency to react to the generic aspects of situations. As Cohen and Nagel point out:

> In dealing intellectually with some concrete, specific situation, we do not pay attention to all of the infinitely complex relations which it has, or to all of its qualities. On the contrary, we neglect almost all the qualities and relations which a thing has, and note only those features which enable us to view that thing as an instance or example of indefinitely repeatable patterns or types of situations. (7, 371)

Thus, our very knowledge of the world would seem to depend on the willingness and the ability to respond to the general features of situations.

A second context in which to view the disposition to react to things in a generalizing way is found in sociology. In his analysis of scientific concepts Ely Chinoy maintains that:

> Much if not most of our everyday conversation deals with specific individuals, occasions, situations, and material things. . . . We spend little time considering in general terms the nature of the family, of jobs, or of dating. The task of sociology, as of all sciences, is to deal with classes of phenomena, not with individual cases. . . . It is in part this concern with the general rather than with the particular which leads us to say that sociological concepts tend toward a higher level of abstraction or generalization than those of everyday discourse. (6, 4)

Consequently, it would seem that in order to think systematically or scientifically one must focus on selected, general aspects of reality.

A third context relevant to the disposition to react to the features of things is the field of educational psychology. In his discussion of "learning to learn" Lee Cronbach states that:

> The ability to use each type of cue is learned. . . . The superior ability of Samoans in rhythmic tasks may be explained as a consequence of cumulative attention to rhythmic cues and actions. . . . The essence of "learning to learn" seems to be directing attention toward appropriate parts of the scene and their relationships. (8, 323 and 325)

The implication of Cronbach's conclusion for objectives in the social studies is that the disposition to respond to something in a consistent way is learned, and consequently it is probably amenable to instruction.

The inspection of the disposition to respond to things in three contexts suggests that a fundamental learning in the social sciences is the disposition to respond to the general features of situations, i.e., to those features of situations that are repeatable. In consequence, for the purposes of this study affective objectives will refer to the person's disposition to respond consistently to selected features of social situations, whether these features be general or particular.

Research Hypotheses

The hypotheses tested in this study refer to two widely separated groups of students. One group is called a Project group and the other group is called a Graduate Student group. The Project group consists of students who have been taught social studies materials in Demonstration Centers for Gifted Youth for one academic year. During the academic year the Project group studied social studies materials prepared by the Social Science Curriculum Study Center at the University of Illinois. The Project students were mainly eighth-grade

students, with less than one-third classified as seventh-grade students. The Graduate Student group consisted of candidates for the master's and doctor's degrees in Education who were enrolled in a graduate course concerned with curricula and methods of teaching in the social studies. In these contexts, it is hypothesized that:

1. Project students will demonstrate a more frequent preference for the general features of social situations than for the particular features of social situations.
2. Preference for the general features of social situations is more positively related to Project achievement test scores than is preference for the particular features of social situations.
3. Graduate students in social studies education will demonstrate a more frequent preference for the general features of social situations than for the particular features of social situations.
4. On the average, graduate students in social studies education will demonstrate a more frequent preference for the general features of social situations than will Project students.

Related Questions

Other important questions, beyond those treated in the research hypotheses, are dealt with in this study. The most important of these questions concerns the feasibility of formulating affective objectives in communicable terms. That is, can affective objectives be so formulated as to reduce the wide range of interpretation commonly associated with statements of affective objectives? (24, 11)

Another question concerns the problem of measuring behavior in such a way that repeated measurements will show consistency, and relevance to the kind of objective we are interested in. In brief, we shall be concerned with the reliability and validity of our set of observations.

There are, in addition, questions concerning the stability of dispositions as well as questions concerning the effects of various factors and conditions on dispositional stability and change. In respect to the stability of the dispositions to react to things, Bloom suggests that:

> Stable characteristics are more likely to be based on interactional processes, ways of relating to phenomena, life style, etc. (3, 4)

In distinguishing between stable and superficial characteristics, Bloom employs such criteria as the length of time required for the development of a characteristic, the

amount of conscious control that may be exerted on particular behavior, and the extent to which a characteristic is dominant at several stages in life. In the light of these criteria it is believed that the disposition to respond to general or particular aspects of phenomena is readily classifiable among the basic or stable personality processes.

Concerning the effects of various factors and conditions on dispositional change, Bruner has stated that:

> In short, an induced set can guide the person to proceed nongenerically and by rote or to proceed as if what was to be learned was a principle or a generic method of coding events. . . . For by virtue of living in a certain kind of professional or social setting, our approach to new experience becomes constrained--we develop, if you will, a professional deformation with respect to ways of coding events. The mathematician tends with time to code more and more events in terms of certain formal codes that are the stock in trade of his profession. The historian has his particular deformations, and so too the psychologist. (5, 52)

Although it is believed that dispositions to respond to things in a generic or a particular way are not among the relatively superficial characteristics that an individual may develop in a short time, and this belief is consistent with conditions implied by Bruner, the present study is limited to a few, relatively brief status studies in contrast to longitudinal growth studies. Nevertheless, by including such disparate

groups as junior high school students and graduate students in this study, some speculation will be afforded concerning the possible influence of professional training on the disposition to respond to the general or particular features of social phenomena.

CHAPTER II

A CONCEPTION OF COGNITIVE PREFERENCE

The major purpose in developing a conception is to facilitate communication. Consequently, the major purpose in developing a conception of cognitive preference is to facilitate communication among curriculum developers, teachers, administrators, students, the public, evaluators, and other curriculum researchers. To this end we turn first to the Taxonomy of Educational Objectives: Cognitive Domain because the work of Bloom and others represents a major attempt to provide a common framework for communication about educational objectives. (4, 10)

Cognitive Domain

The authors of the taxonomy describe the cognitive domain in these terms:

> The cognitive domain includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills. (4, 7)

Therefore, a comprehensive explication of the meaning of cognition could be concerned with such behaviors as recalling, comprehending, applying, analyzing, synthesizing, and evaluating.

However, at the present stage of curriculum development and evaluation in the social studies, we are generally concerned with a more limited view of cognition.

We take as the basis for our view of cognition the first reports of the work of the eight original Centers established under Project Social Studies, i.e., curriculum projects financed by the Cooperative Research Branch of the Department of Health, Education, and Welfare and initiated in 1963. In their summary report of the work of these eight original Centers, Fenton and Good state that:

> With one exception, each of the HEW curriculum projects in the social studies seeks to identify the structure of social science disciplines or to build a curriculum around social science concepts. . . . Thus far, however, no consensus about structure has emerged. Some groups seem to identify the term with generalizations drawn from the social sciences; one implies that structure is synonymous with the social scientists' mode of inquiry. (13, 207)

Thus it would seem that the organizing scheme and basic educational objective in Project Social Studies is knowledge, knowledge about concepts, or knowledge about generalizations, or knowledge about mode of inquiry. Starting with the restricted view that cognition consists largely of knowledge about things, then it would seem appropriate to inspect the knowledge category as it is outlined by the authors of the Taxonomy of Educational Objectives: Cognitive Domain. Bloom and his colleagues have

outlined the knowledge category in the following way:

1.00 Knowledge

1.10 Knowledge of Specifics

1.11 Knowledge of Terminology

1.12 Knowledge of Specific Facts

1.20 Knowledge of Ways and Means of Dealing with Specifics

1.21 Knowledge of Conventions

1.22 Knowledge of Trends and Sequences

1.23 Knowledge of Classifications and Categories

1.24 Knowledge of Criteria

1.25 Knowledge of Methodology

1.30 Knowledge of the Universals and Abstractions in a Field

1.31 Knowledge of Principles and Generalizations

1.32 Knowledge of Theories and Structures (4, 201-204)

For the purpose of this study, i.e., the formulation in communicable terms of the disposition to react to the particular or general features of social situations, it is useful to view the knowledge category as extending from concrete to abstract, or particular to general. For example, knowledge of specifics will refer to concrete, particular phenomena: "On September 24, 1963, the United States Senate ratified the nuclear test ban

by a vote of eighty to nineteen." However, knowledge of universals will refer to abstract, general phenomena: "All societies have conflicts about the allocation of values."

In brief, the search for different types of cognition to which students can respond has led to a knowledge category which ranges from knowledge of specifics to knowledge of the universals and abstractions in a field. The position is not without warrant for the acquisition of knowledge or information is probably the most common educational objective in American education. (4, 28) In order to further specify the types of cognition with which we shall be concerned we make the simplifying assumptions that 1) knowledge of specific facts and knowledge of terminology are characteristic of traditional social studies curricula in American schools, and 2) knowledge of methodology and knowledge of principles and generalizations are characteristic of "new" social studies curricula in American schools. However, it should be recognized that the difference is one of emphasis; there is undoubtedly considerable overlap in the kinds of knowledges treated in these "model" curricula.

To summarize, by cognition or cognitive we shall now refer to the following manifestations:*

---

*Adapted from Taxonomy of Educational Objectives, Handbook I: Cognitive Domain.

1. Knowledge of specific facts
2. Knowledge of terminology or terms
3. Knowledge of methodology
4. Knowledge of principles and generalizations

Affective Domain

The authors of the taxonomy concerned with affective objectives describe their focus in the following terms:

> Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience. (21, 7)

Or, to state the matter in terms of a continuum, the authors of the Affective Domain describe the following process:

> The more we carefully studied the components (of affective objectives), however, the clearer it became that a continuum might be derived by appropriately ordering them. Thus the continuum progressed from a level at which the individual is merely aware of a phenomenon, being able to perceive it. At a next level he is willing to attend the phenomena. At the next level he responds to the phenomena with a positive feeling. Eventually he may feel strongly enough to go out of his way to respond. At some point in the process he conceptualizes his behavior and feelings and organizes these conceptualizations into a structure. This structure grows in complexity as it becomes his life outlook. (21, 27)

Underlying the continuum described above seems to be a process that can be viewed as the development of inner control.

Before attempting to locate the behavior referred to as "preference" on the continuum of affective objectives, it is necessary to return to some clarifications made earlier. First, it was noted that an affective objective refers to a person's disposition to react to something in a consistent way. Second, when viewed in the context of social stimuli, it was seen that an affective objective refers to a person's disposition to respond consistently to particular or general features of situations.

The contextual definitions of affective objective stated above is actually quite close to our intuitive or ordinary conception of "preference." However, it is necessary that an attempt be made to locate "affective behavior" or "preference" on the affective continuum. For this reason, an inspection will be made of the affective domain as it is outlined by the authors of the Taxonomy of Educational Objectives: Affective Domain. Krathwohl and his colleagues have outlined the affective category in these terms:

1.0 Receiving (attending)

1.1 Awareness

1.2 Willingness to receive

1.3 Controlled or selected attention

2.0 Responding

2.1 Acquiescence in responding

2.2 Willingness to respond

2.3 Satisfaction in response

3.0 Valuing

3.1 Acceptance of a value

3.2 Preference for a value

3.3 Commitment (conviction)

4.0 Organization

4.1 Conceptualization of a value

4.2 Organization of a value system

5.0 Characterization by a value or value complex

5.1 Generalized set

5.2 Characterization (21, 95)

Where shall the disposition to respond consistently to particular or general features of situations be located on the above continuum? Clearly, there is no necessity that the disposition to respond in a consistent way be accompanied by an emotional response, i.e., a feeling of satisfaction, pleasure, or enjoyment. If this is true, then it would seem that the disposition to respond in a consistent way should be located at an early level in the continuum, prior to the 2.3, satisfaction in response, category. However, as Krathwohl and his associates state:

> The emotional component appears gradually through the range of internalization categories and. . . it is more particularly relevant to certain behaviors and/or to behavior in certain areas, subject matter, or situations than to others. Thus the attempt to specify a given position in the hierarchy as the one at which the emotional component is added may be doomed to failure. (21, 131)

What the authors of the taxonomy seem to imply therein is that the presence or absence of an emotional response in relation to a process of human development will depend on the particular characteristics of situations, i.e., what the individual brings to the situation in terms of his history and the interaction of this history or experience with certain features of the situation. However, for the purpose of a generic description of a process, the authors have arbitrarily placed the emotional component at a point where it seems to occur most frequently and where it appears to be an important aspect of the objectives at a level of the continuum.

The problem raised immediately above suggests something very important about the nature of the Taxonomy of Educational Objectives, Cognitive and Affective Domains. What it suggests is that the objectives are not stated in behavioral or observation terms. Rather, the description of the objectives would seem to point to the kinds of situations in which an objective may or may not be observed. Whether or not an objective is

present would seem to depend on the interaction of learner and situation. In consequence, considerable interpretation is required in applying the categories or objectives to specific cases.

Concerning the question at hand, "Where shall the disposition to respond consistently to the particular or general features of situations be located on the affective continuum?", it has been argued that an inherent vagueness or open-endedness of the continuum categories renders classification difficult. Consequently, it will be necessary to turn to the purpose of this study in order to identify some useful guidelines.

It has been stated earlier that the purpose of this study is to formulate (certain) affective objectives in communicable terms. Successive interpretations of this purpose have resulted in a focus on the individual's consistent preference for the particular or general features of cognitive statements. It is in this latter formulation that we find a useful guideline. By "prefers" we mean that the reaction or response is by choice.

It should be clear from the usage of "prefers" that we are referring neither to sheer awareness of something nor to satisfaction in the response to something. We are referring to the kind of behavior specified in the taxonomy of affective objectives as "willingness to respond," the 2.2 category as

outlined earlier. Concerning this kind of behavior, the authors of the taxonomy tell us that:

> The key to this level is in the term "willingness," with its implication of capacity for voluntary activity. This is not so much a response to outside prompting as it is to a voluntary response from choice. . . . The student's display of interest in what he is doing is a definite sign of 2.2 behavior. Such positive reactions can be systematically noted in ongoing class behavior or by setting up paper-and-pencil test situations in which the student makes preferences among activities he has performed or indicates to what extent he wants to continue activities already begun at the teacher's request. (21, 124, 125 and 127)

To summarize, by cognitive we refer to the following:

1. Knowledge of specific facts
2. Knowledge of terminology or terms
3. Knowledge of methodology
4. Knowledge of principles and generalizations

By preference we refer to a person's willingness to respond in a consistent way. Thus, by cognitive preference we refer to a person's willingness to respond consistently to the particular or general features of knowledge.

The purpose of this lengthy clarification of terms has been the facilitation of communication about cognitive preference. Cognitive preference as a type of behavior has been located in both the cognitive and affective domains outlined by

specialists in student behavior. In Chapter Three of this study it will be shown how a paper-and-pencil test has been developed based on this conception of cognitive preference.

For the present, one task remains. It is now necessary to discuss cognitive preferences as educational objectives with some illustrations taken from the classroom.

Cognitive Preferences as Educational Objectives

It has been shown in the first chapter of this study that the new curriculum projects are heavily concerned with attitudes, interests, preference in cognition, and ways of relating to phenomena. Thus far, the second chapter of this study has been concerned with sketching a conception of cognitive preference that would serve as a link between the general educational objectives just mentioned and an approach to behavior called willingness to respond.

We now turn to the willingness to respond as an educational objective and we shall limit our inspection to the willingness to respond to types of knowledge. Concerning the willingness to respond, the authors of the Taxonomy of Educational Objectives: Affective Domain state that:

> This (willingness to respond) is an important category for education, and one can find a large number of objectives which fit it. . . .

> Many of the objectives categorized at this level are socially desirable ones which, upon being exhibited, bring social approval to the learner and so are "self-reinforcing." In this sense the teacher's task is often reduced to that of so setting the environment that the behavior is emitted in a social situation. (21, 125)

The authors of the Taxonomy then go on to list illustrative educational objectives based on the willingness to respond. The following illustrative objectives,* selected from the authors' list, seems especially related to the willingness to respond to types of knowledge:

1. Voluntarily looks for informational books
2. Voluntarily seeks new information
3. Displays an interest in research projects
4. Responds with consistent and active interest to intellectual stimuli
5. Asks thought-provoking questions
6. Interests himself in broad social problems
7. Exhibits a scientific interest

Thus, it can be seen that the willingness to respond to types of knowledge might range from the particular, looks

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* Adapted from Taxonomy of Educational Objectives, Handbook II: Affective Domain.

for or seeks new information, to the general, is interested in research projects or broad social problems.

At this point in the study, additional clarification of the conception of cognitive preference may be achieved by inspecting some cognitive responses as they have occurred in the classroom. The materials developed by the Social Science Curriculum Study Center at the University of Illinois provide the cognitive stimuli and the students who are utilizing these materials provide the responses.

Course I of the Project materials is titled "Man In Society" and Unit I is called "The Family." On the first day of class, the students are presented with the following context:

> As science developed, men became interested in many things not previously thought of as "scientific." One of these things was the family. We all know that the family is a very important part of our lives, but most of us have not taken time to ask, and look for answers to hard questions about family patterns. What important questions would you want to ask about the family? (30, 1)

Following are some representative student responses to the question:

1. "What is a typical American family like?"
2. "What are some differences among families?"
3. "What are the purposes of American families?"
4. "What is a family?" (32, 1)

On the basis of these responses, it can be noted that students respond to a general question about the family, with questions pointing mainly to general knowledge about the family.

After approximately six weeks of study dealing with the family in society, the Project students are presented with the following question:

> In order for us to obtain an adequate understanding of the colonial New England family, what questions do you think we need to answer? (32, 68)

At this point the students responded in the following fashion:

1. "What relationship did the family have to society?"
2. "What roles did family members play?"
3. "How was socialization carried on in the colonial family?"
4. "Who were the members of the colonial family?"

(32, 68)

Once again the student responses to a general question about the family point to general features of, or general knowledge about, the family. However, in this second example the features of the family to which students respond seem somewhat more abstract than those suggested by the first example.

In any case, the point of these examples of cognitive preference in the classroom is not that students respond to increasingly abstract features of social reality as instruction progresses, but rather that students will exhibit cognitive preferences when the environment is structured to facilitate these preferences.

Other questions that might facilitate the expression of cognitive preferences in the classroom include the following:

1. What does this term mean to you?
2. How would you define this term?
3. What do you think caused this event?
4. What explanation do you have for this result?
5. Why do you think this happened?
6. How do you justify this choice?
7. Why do you prefer this consequence?
8. How do you know that this conclusion follows necessarily from these reasons?
9. How do you know that this statement is true?
10. How would you test this hunch?

Just as students may respond to questions of the above kind with concrete details or with abstract conceptions and criteria, so too may academicians. In this regard, Morton White has observed that:

> There are two kinds of historians, two kinds of students who want to approximate the whole truth about a given object. First there are those who conceive it as their task to amass as many true singular statements as can be amassed at a given moment, and in this way approximate the ideal of the historian. Clearly this seems like the way to approach an infinite or very large number of statements--gather as many as you can. But there are historians who are more discriminating, who recognize that some singular statements are historically more important than others, not because they fit in with some moral point of view, but because they are more useful for achieving the history of the object as here defined (a history contains true statements about the whole course of an object's existence). The first group is nearsighted. It tries to amass everything in sight on the theory that this is a sure method of getting close to the whole truth. But it fails to realize that those who select facts which seem to have causal significance are more apt to come to know things about the future and past of the object. (35, 718-719)

And with these last illustrations the discussion of a conception of cognitive preference is terminated. We shall now turn to the procedures involved in establishing a set of replicable observations that will provide evidence concerning the student's willingness to respond to either the particular or general features of data about society.

CHAPTER III

DEVELOPMENT OF THE COGNITIVE PREFERENCE TEST

It has been indicated earlier that the purpose of this study is the formulation in communicable terms of the disposition to react to the particular or general features of data about society. Now, prior to a description of the steps that were taken in constructing a Cognitive Preference Test in the Social Sciences, it would seem necessary to state the meaning of the term behavior as it is employed in this study.

A View of Behavior

In his analysis of the preparation of instructional objectives, Robert Mager states that:

> Behavior refers to any visible activity displayed by a learner (student). (24, 2)

In suggesting how to write objectives that will describe the desired behavior of the learner, Mager points to the following qualities of meaningful objectives:

> First, identify the terminal behavior by name: we can specify the kind of behavior which will be accepted as evidence that the learner has achieved the objective.
>
> Second, try to further define the desired behavior by describing the important conditions under which the behavior will be expected to occur.

> Third, specify the criteria of acceptable performance by describing how well the learner must perform to be considered acceptable. (24, 12)

While Mager does not claim that an objective which demonstrates the above characteristics is behaviorally defined, he does suggest that these steps are useful in arriving at behavioral formulations.

In his discussion of defining desired outcomes or objectives in behavioral terms C. M. Lindvall maintains that:

> A first task of a team working on the development of a specific unit is to define exactly what pupils are to be expected to be able to do after they have mastered the unit. The emphasis here is on stating these objectives in terms of definite pupil behaviors. They are not stated in terms of what the teacher is going to do. They are not to describe learning activities. Each statement is to describe something that the pupil will be able to do after he has had the learning experience. Also they are not to be stated in such terms as "to understand. . .," "to master. . .," "to appreciate. . .," etc. Rather they are to tell what a pupil will be able to do if he understands, masters, or appreciates. That is, they will be stated in terms of such pupil behaviors as "to explain. . .," "to state. . .," "to solve. . .," "to interpret. . .," "to compare, etc. (23, 13)

Thus, according to Lindvall, a behaviorally-defined objective should describe what a student will be able to do after he has attained the objective.

Robert Gagne has emphasized the importance of defining the objectives of learning in terms of observable human

performances. In his distinction between statements of objectives that are ambiguous, and "true" statements of objectives, Gagne maintains that:

> "The kind of statement required appears to be one having the following components:
>
> 1. A verb denoting observable action. . .
> 2. A description of the class of stimuli being responded to. . .
> 3. A word or phrase denoting the object used for action by the performer. . .
> 4. A description of the class of correct responses. (15, 243)

Clearly, Mager, Lindvall, and Gagne view the specification of behavior as a necessary condition for the meaningful communication of educational objectives. The danger is that these authors may equate behaviors and educational objectives.

It should be mentioned that the writer's view of behaviors as educational objectives differs somewhat from the three formulations cited above. While it is undoubtedly correct that <u>evidence</u> about the effects of education are to be found in <u>behavior</u>, it does not follow necessarily from this conclusion that behaviors constitute the only communicable or testable objectives of education. It is quite possible, even highly probable, that some important educational objectives refer to dispositions to respond, or capacities to respond. The meaning of these dispositions or capacities to respond could not be

exhausted by the most lengthy list of behaviors, for there are always contexts that we either have overlooked or are not yet in a position to conceive. This point shall be elaborated upon as data derived from the Cognitive Preference Test and other tests are analyzed.

Structuring the Cognitive Preference Test

The extensive analysis of a conception of cognitive preference, which constitutes Chapter II of this study, led to some basic decisions or commitments concerning the formulation of cognitive preference in this study. It was seen that cognition or cognitive activity refers to the following manifestations:

1. Knowledge of specific facts
2. Knowledge of terminology or terms
3. Knowledge of methodology
4. Knowledge of principles and generalizations.

It was also seen that preference refers to the willingness to respond in a consistent way. Finally, it was seen that by cognitive preference we refer to a person's willingness to respond consistently to particular or general features of knowledge.

Therefore, the decisions concerning the uses of cognitive preference seem to suggest a primitive type of structure for the eliciting of cognitive preference. First, a type of situation is to be devised in which the person is permitted to respond voluntarily to stimuli. Second, the stimuli are cognitive in nature, i.e., referring to various formulations of knowledge.

For example, the student might be given the following instructions: "Read the following statements and check the statement you prefer most." Then, the student might be presented with four statements of the following kind:

_____ (A) "When President Washington wrote his Farewell Address in September of 1796, a two-party system already existed in the United States.

_____ (B) A fundamental difficulty involved in the measurement of political influence lies in the fact that the type of political influence varies with the situation.

_____ (C) A 'political party' may be defined as a collection of individuals which makes policy proposals and supports candidates for public office.

_____ (D) The major political parties in the United States have been able to survive because they have been

flexible enough to attract a wide range of supporters."

Each of the four statements is designed to represent a different form of cognition in the social sciences. Statement A is designed to represent knowledge of specific fact. Statement B purportedly illustrates knowledge of methodology, statement C knowledge of terminology, and statement D knowledge of principle. Therefore, the selection of statement A by the student would contribute to his cognitive preference for the "particular features"score, the selection of statement B would contribute to cognitive preference for the "general features" score; the selection of statement C would contribute to cognitive preference for the "particular features" score; and the selection of statement D would contribute to cognitive preference for the "general features" score. Thus it can be seen how the uses of cognitive preference suggest a primitive structure for devising test items that would elicit cognitive preferences.

The Cognitive Preference Test: High School Physics

The Cognitive Preference Test in High School Physics (11) was developed by Robert Heath and others in the spring of 1962. The cognitive preference test under discussion in this study represents an adaptation of Heath's test to the social sciences. Heath has described the original version of a cognitive preference test in the following terms:

> The instrument has the appearance of a four option, multiple choice test. The items present introductory information in the stem, frequently illustrated with a diagram or graph. Four alternative "answers" follow. Here the similarity (with the four option, multiple choice test) ends. Each of the options in each of the test items is correct, and the student is told that all options are correct. The directions read, in part, as follows.
>
> Directions
>
> In this test you are to indicate which one of four choices you prefer. Each test item begins with an introductory statement or diagram. This information is followed by four lettered choices. Each of these choices is correct.
>
> Read the introductory statement and all four choices carefully. Select the choice you prefer most in connection with the introductory information. . . (19, 242)

In further describing the nature of the test, Heath goes on to say:

> In each item, each of the four options was designed to demonstrate a different form of cognitive preference in physics. One option was to show preference for memory of specific facts or terms. Another provides a practical application of the information given in the item stem. A third choice reflects some challenging or questioning of the information given. The fourth option is a statement of a fundamental principle (or a conclusion based upon such a principle) of physics underlying the data. For example, this is the seventh item of the test.
>
> The pressure of gas is directly proportional to its absolute temperature.
>
> (A) The statement, as given above, fails to consider effects of volume changes and change of state

(B) Charles' or Gay-Lussac's Law

(C) The statement implies a lower limit to temperature

(D) This principle is related to the fact that overheated automobile tires may "blow out." (19, 243)

It should be clear from the above descriptions of the preliminary structuring of the Cognitive Preference Test in the Social Sciences and The Cognitive Preference Test: High School Physics, that there is a close parallel between the two formulations. The writer is indebted to Dr. Robert W. Heath, for the following conceptions: 1. that cognitive preference represents a type of "achievement" related to curricula, and 2. that the cognitive preferences may be cast in the form of four option, multiple-choice test items. Beyond this the two formulations of cognitive preference would appear to differ.

The basic difference between the two formulations of cognitive preference would seem to lie in the different conceptions of cognition employed. It will be recalled that for Heath cognition referred to memory of specific facts or terms, practical application of the information given, challenging or questioning of the information given, and statement of a fundamental principle. In contrast, it will be remembered that for the writer cognition refers to the recall or recognition of different types of knowledge, i.e., knowledge of specific facts,

knowledge of terminology, knowledge of methodology, and knowledge of principles and generalizations. Other differences between the two formulations will be identified as the description progresses.

A Source of Social Science Principles

In this study the decision was made to elicit cognitive preferences in "situations" or contexts that were new to the students. That is, instead of eliciting cognitive preferences in the contexts in which they were learned, i.e., in the contexts of a particular curriculum formulation, it seemed desirable to elicit cognitive preferences in a variety of new "situations." This approach seems to provide the dual advantage of testing for transfer, and testing with contexts that imply no advantage for the students of a particular curriculum. In The Cognitive Preference Test: High School Physics however, the contexts designed to elicit cognitive preferences were based on specific content drawn from the Physical Science Study Committee's Physics Course.

When the contexts designed to elicit cognitive preferences are not based on a particular curricular formulation, it becomes necessary to identify an alternative authoritative

source of principles, methodology, terms, and specific facts. The recently-published work by Berelson and Steiner titled, Human Behavior provided an extensive source of social science principles. (2)

The authors describe their inventory in the following fashion:

> There they are: 1045 numbered findings from the scientific study of human behavior. Not all absolutely true, not all final or definitive --but certainly among the best-established generalizations of this scope. Taken together, these findings reveal a good deal about the subjects studied in the behavioral sciences, the ways in which they are studied, and the kind of knowledge that emerges. (2, 659)

Once an authoritative source of social science principles was identified, two further problems were immediately suggested. The first problem concerned a procedure for selecting a sample of principles from the available population of principles. The second problem related to the difficulty of translating abstract formulations of social science principles into statements comprehensible to eighth-grade students while still maintaining the essential import of the formulations. The procedures for dealing with these two problems are now described.

A randomly-selected sample of social science principles was achieved by first assigning numbers to each of the

principles in the inventory compiled by Berelson and Steiner. The assigned numbers ranged from 1 to 1022.* A copy of the numbered principles from Human Behavior is given in Appendix A. Next a table of random numbers provided by Allen L. Edwards was employed. (12, 378-382). The table was entered randomly, and only the first four digits, reading from right to left, of the entry number, 92553, and each of the successive numbers were dealt with. As numbers between 001 and 1022 were encountered in the table of random numbers, they were compiled until a list of sixty randomly-selected numbers was assembled. The sixty randomly-selected numbers are indicated by asterisks in Appendix A.

Since each of 1022 principles listed in the inventory by Berelson and Steiner had already been assigned a number, see Appendix A, the sixty randomly-selected numbers could then be related to their corresponding principles. Therefore, the sixty social science principles thus identified represented a randomly-selected sample of principles. Appendix A shows the principles corresponding to the sixty randomly-selected numbers as these principles are indexed by Berelson and Steiner in Human Behavior.

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*This total, 1022, does not agree with the total, 1045, stated by the authors of the inventory. The discrepancy appears to be due to the practice, employed by Berelson and Steiner, of counting the context-setting statements as statements of relationship. The writer did not count context-setting statements as generalizations.

The second problem suggested by the use of a non-curricular source of social science principles was that of translating abstract formulations of social science principles to statements comprehensible to eighth-grade students. An attempt was made to achieve this translation by utilizing the following procedures:

1. Statements were often reformulated in order to reduce the ambiguity of specific terms. Clues as to specificity of meaning were frequently found in attendant elaborations of principles provided by the authors of Human Behavior.
2. When a technical term was encountered, an attempt was made to replace it with a reasonably equivalent term taken from ordinary or non-technical usage.
3. When a reasonably equivalent term from ordinary language could not be identified, a technical term was replaced by a descriptive phrase.
4. Complex statements were frequently reduced in length and number of qualifications. The effects of these reductions were typically a loss of precision and an extended range of applicability of the derived statement.

5. Complex relationships were often simplified by reducing the number of variable involved. This approach usually produced an oversimplified statement of relationship.

The following examples, taken from this study, illustrate the various procedures described above.

Example 1. This statement is taken directly from Human Behavior.

> As compared. . . with their counterparts, criminal behavior is more likely among lower-class groups. (2, 625-627)

This statement was subsequently translated by the writer to read, "Criminal behavior is more likely among lower-class groups than among upper-class groups." As it appears in the Cognitive Preference Test in the Social Sciences the statement reads, "Crime is more likely among the poor than among the rich."

This first example indicates the necessity of reducing the ambiguity of certain terms. "Their counterparts," an ambiguous reference, was replaced by "upper-class groups." The example also shows how such technical terms as "criminal behavior," "lower-class groups," and "upper-class groups" were replaced by such ordinary-language terms as "crime," "poor," and "rich."

Example 2. This statement is taken directly from Human Behavior.

> The spread of rumor is directly related to audience predispositions. (2, 531)

This statement was subsequently translated by the writer to read, "Rumors tend to be heard by people to whom the rumors are acceptable." As it appears in the Cognitive Preference Test the statement reads, "Rumors tend to be passed along by people who find the rumors acceptable."

Example 2 demonstrates the need for replacing a technical term with a descriptive phrase. In this case, the technical term "audience predispositions" is replaced by the descriptive phrase "people who find the rumors acceptable." The example also shows how simplification of an abstract statement tends to affect range of applicability. In this case the derived statement, "Rumors tend to be passed along by people who find the rumors acceptable," has a more restricted range of applicability than the original statement, "The spread of rumors is directly related to audience predispositions." That is, audience predispositions may range on a continuum from highly acceptable to highly unacceptable and thus imply behavior ranging from considerable facilitation of the spread of rumors to effective thwarting of the spread of rumors.

Example 3. This statement is taken directly from Human Behavior.

> Making a civilian into a soldier in a short period of time requires an institutional means for bringing the informal, personal pressures of the recruits to bear in reinforcing the formal requirements of the army. (2, 444)

This statement was subsequently translated by the writer to read, "The rapid conversion from civilian to soldier requires a consistency between the personal pressures exerted among recruits and the formal requirements of the army." As it appears in the Cognitive Preference Test the statement reads, "Converting civilians to soldiers requires conformity to the rules of the army."

Example 3 provides an instance of simplification by reduction of variables. In this case three variables were deleted, short period of time, an institutional means, and personal pressures of the recruits. Another variable, the formal requirements of the army, was replaced by the rules of the army. The net effect of these simplifications was a loss of precision and an oversimplified statement of relationship.

In brief, although it was found that abstract statements of relationship about social phenomena could be considerably simplified, in terminology and nature of relationship, it was also found that such simplification frequently results in a loss

in the precision of the variables and an oversimplification of the nature of the relationship between or among variables. Within the context of the advantages and disadvantages described above, Human Behavior was employed as an authoritative source of social science principles and generalizations.

Development of Contexts and Alternative Statements of Cognitive Preference

It has been indicated earlier that the writer is indebted to Robert W. Heath for the view that cognitive preferences may be cast in the conventional form of four option, multiple choice test items. General support for this approach is suggested by Mayhew in his analysis of the measurement of non-cognitive objectives in the social studies. Mayhew states that:

> A major methodological development in the assessment of affective outcomes are the projective techniques first used clinically but which have gradually been adapted for classroom use. . . While there are many examples of projective devices, to be effective any one must set a plausible task in which (1) the student will seek to do well, (2) there are sufficient ambiguities to allow individual differences to be demonstrated and (3) there is opportunity to load the situation with the attitude content in which the teacher is interested. (25, 126)

While the four option, multiple-choice format bears little structural resemblance to such open-ended forms as

sentence-completion tests and word-association tests, selection from alternative cognitive preferences does provide a reasonable task satisfying the conditions stated above by Mayhew. More importantly, the assumption that a person's responses to ambiguous stimuli are projections of his own basic feelings would appear to be as tenable in the case of forced choices of cognitive statements as in the case of freely-constructed responses.

The next step taken in the development of the Cognitive Preference Test was that of identifying or constructing suitable contexts that would serve as an introduction for the four statements of cognitive preferences. That is, starting with a set of authoritative social science principles and generalizations, it then became necessary to construct contexts that would provide introductions for these principles.

Introductory contexts were developed by first identifying the main variables specified in generalizations. For example, the statement "Crime is more likely among the poor than among the rich" includes three main variables, crime, the poor and the rich. These variables were employed as subject indexes with which to enter the Readers' Guide to Periodical Literature. An article was subsequently located that dealt with two of the three main variables stated above. The article was interpreted and reduced so that an introductory context concerned with the

relationship between poverty and crime was developed.

The introductory context follows:

> Welfare and relief costs in the District of Columbia in 1964 were 35 per cent more than in 1963.
>
> The District's crime rate for the first six months of 1964 increased 34.7 per cent over the same period of 1963--a rate of increase more than double that for the nation. (Appendix B, 131)

Articles related to the social science principles derived from Human Behavior were generally found in such popular periodicals as New York Times Magazine, The Reporter, U. S. News and World Report, Reader's Digest, New Yorker, Harper's Magazine, Time and Newsweek. Topics not typically dealt with in popular sources were sometimes located in such semi-technical sources as Scientific American, National Geographic Magazine and Bulletin of the Atomic Scientists. Finally, in those few cases wherein popular and periodical sources did not contain discussions of social science principles in the sample from Human Behavior, resort was made to general or introductory textbooks in a particular field or to a classic study of a topic, e.g., Gordon Allport's The Psychology of Rumor.

Following the development of a social science principle and an introductory context relevant to the principle, three statements for the individual test items were constructed.

These statements were (1) a statement of specific fact, (2) a statement of terminology and (3) a statement of methodology.

The statement of specific fact was usually the easiest to formulate. Typically, the discussions of social science principles contained in periodicals and textbooks included many statements of specific facts. The problem was one of selection rather than construction. In each case, a statement of specific fact was selected that was related to a central variable contained in a social science principle. Some representative statements of specific fact follow:

1. During 1964 there were 30,660 cases of serious crime in the District of Columbia. (Appendix B, 131)

2. In 1960 families in the lowest fifth of the income distribution for the United States had incomes under $2,900. (Appendix B, 132)

3. A classic study of social ranks was conducted in Newburyport, Massachusetts. (Appendix B, 135)

4. Potential women voters in the United States outnumber men by more than four million. (Appendix B, 129)

5. The first Hawthorne experiment was conducted in one small room of a large factory in the town of Hawthorne near Chicago. (Appendix B, 142)

In ease of construction, the statement of terminology ranked next to the statement of specific fact. The usual procedure for constructing the statement of terminology consisted of identifying the usage of a key term in the periodical

discussions of social science principles and stating the usage or meaning of the term in ordinary language. In cases where the discussion of social science principles was somewhat technical, usages were identified in such technical dictionaries as A Dictionary of the Social Sciences, Dictionary of American Politics and other specialized dictionaries in the social sciences. Some representative statements of terminology follow:

1. A race consists of people with a common biological heritage involving certain physical distinctions. (Appendix B, 128)

2. The poor may be defined as families in the lowest fifth of the income distribution. (Appendix B, 132)

3. Values refer to those things (objects, ideas or experiences) to which we attribute worth. (Appendix B, 134)

4. Birth rate refers to the number of births per 1,000 of population. (Appendix B, 139)

5. Dating is a part of the socialization experience which has as an important function the selection of a mate. (Appendix B, 164)

The most difficult of the four cognitive preference options to construct was the statement of methodology. Herein, an attempt was made to formulate some ways or means of dealing with an idea or set of ideas. As in the case of the other cognitive preference options, i.e., statement of specific fact and statement of terminology, the idea or ideas dealt with were drawn from the social science principles derived from Human Behavior.

In general, the statements of methodology that were developed seem to fall into two categories. The first category is best subsumed under the conception of criteriology. That is, statements of methodology were developed which either stated the source of some data, an implied criterion, or stated a standard employed in making a judgment, an explicit criterion.

The following statements of methodology illustrate sources of data:

1. Male-female voting proportions are not based on voter counts, but on estimates from census and voter-registration data. (Appendix B, 129)

2. Estimates of the view of the world held by groups of people are often based on sample surveys of their opinions, attitudes, or beliefs. (Appendix B, 158)

3. Divorce statistics in the United States are often inaccurate because not all of the fifty states cooperate in securing and reporting this information. (Appendix B, 146)

The following statements of methodology illustrate standards employed in making judgments:

1. The success of a civilized society will be largely judged by the creative activities of its people in the arts, humanities and sciences. (Appendix B, 137)

2. One standard of artistic sensitivity is an awareness of the hidden structure in things seen, heard, or felt. (Appendix B, 141)

3. Two of the best predictors of social status in the United States are education and occupation. (Appendix B, 153)

4. Intermarriage is the best index that one family considers the other approximately equal socially or economically. (Appendix B, 164)

Other statements of methodology that were developed are classified differently. This category is referred to as "methods of inquiry" and it includes techniques of observation and experimental control. Essentially, the statements of methodology comprehended by this category include the procedures and assumptions by which the behavioral scientists work.

The following statements of methodology illustrate some of the procedures and assumptions of the behavioral scientist:

1. When a change in poverty is accompanied by a change in rate of crime, a relationship is suggested. (Appendix B, 131)

2. The relocation centers for Japanese-Americans approximated laboratory situations where enforced conditions prevailed and measured observations were carried out. (Appendix B, 143)

3. The effectiveness of a family planning program may be studied by a before-and-after survey of a random sample of married women of childbearing age. (Appendix B, 165a)

4. In their work, behavioral scientists reject all claims to the absolute truth, or the necessity of such belief. (Appendix B, 152)

5. The social scientist can assume the role of his subjects in order to become sensitized to the context of his investigation. (Appendix B, 162)

Finally, some statements of methodology developed for the Cognitive Preference Test in the Social Sciences remain that cannot be classified under the rubrics of criteriology or methods of inquiry. The ambiguity of these statements of methodology, viewed by the writer as intuitively-based formulations, is suggested by both Rudner and Kaplan.

Richard Rudner in his Philosophy of Social Science states:

> No one, in fact, has demonstrated that there is or could be such a thing as logic of discovery. . . . To the context of discovery. . . belong such questions as how, in fact, one comes to latch on to good hypothesis, or what social, psychological, political, or economic conditions will conduce to thinking up fruitful hypotheses. (29, 6)

Abraham Kaplan's comments, although more encompassing, are equally relevant. In his The Conduct of Inquiry he states:

> I have tried throughout to emphasize the great range of cognitive styles and interests

> which make up the scientific enterprise, and the methodological freedom to pursue any of them, even those which are of lesser importance to a given reconstructed logic of science. There are scientists who work chiefly in libraries or in clinics as well as in laboratories; there are generalists and specialists, synthesizers and analysts; system builders and perfecters of instruments; theoreticians and experimentalists; those probing for breakthroughs and those engaged in mopping-up operations. It is a matter not of justice but of fact that science excludes none of them; and certainly none is to be excluded by the philosophical bystander in the name of methodology. . . . Methodology, in short, offers the scientist only a nondirective therapy: it is intended to help him live in his own style, not to mold him in the image of the therapist. (20, 407-408)

The argument herein is that methodology in science is essentially ambiguous and incomplete and consequently, attempts to classify statements of methodology will tend to reflect this ambiguity and openness.

In connection with the development of statements of methodology, the writer wishes to acknowledge the assistance received from a study of chapters on methodology in Berelson and Steiner's Human Behavior, Selltiz, Jahoda, Deutsch and Cook's Research Methods in Social Relations, Chase's The Proper Study of Mankind, Inkeles' What is Sociology? Sorauf's Political Science and Rose's Sociology.

And thus, the development of the four option, multiple choice cognitive preference test item has been described in

detail. It is hoped that the detailed description of problems and procedures employed in developing the test items will be useful to others, should they engage in a similar quest. Appendix B represents a first draft of the forty-item Cognitive Preference Test in the Social Sciences as it was written by the author. It should be noted that the forty social science principles that were utilized in the test do not represent a randomly-selected sample of principles. Rather, these principles represent topics that are more easily identifiable in the literature, both popular and technical.

The study will now proceed to an analysis of logical considerations entailed in the appraisal of tests in relation to data derived from administrations of the Cognitive Preference Test in the Social Sciences.

CHAPTER IV

EMPIRICAL ANALYSIS OF THE COGNITIVE PREFERENCE TEST

The method of the present study was designed to utilize recent developments in educational materials and methods. The Project students were taught social science materials developed by the University of Illinois Social Science Curriculum Study Project by teachers who had received summer institute training in the use of these materials. The instructional materials developed by the Social Science Curriculum Study Project emphasize the structures and processes of basic social institutions with attention to fundamental concepts, generalizations, and ways of analyzing data. (Appendix C, p.167-8)The instructional strategies employed by the Social Science Curriculum Study Project include an inductive teaching strategy in which examples and concrete aspects of experience are utilized as a basis for student formulations of abstract characteristics and relationships. The inductive teaching strategy is supplemented by expository-type readings, lectures, and audio-visual materials.

A Project sample was systematically selected, i.e., every fifth student was selected from an alphabetized list of all Project students. All Project students participated in the Demonstration Project for Gifted Youth, Curriculum Laboratory,

College of Education, University of Illinois during the academic year 1964-1965. Most Project students scored above the eightieth percentile on standardized tests of academic ability; they were recommended for the Program for Gifted Youth by a teacher from a previous grade; and their parents consented to their participation in the Program for Gifted Youth. Finally, the Project group was made up of eighth-grade students with a few seventh-graders.

The composition of the sample by schools and classes is given in Table 1. University High School provided one seventh-grade class for the study. As indicated in the table, six students from this class are included in the sample.

Reliability Data, Cognitive Preference Test

In their discussion of a general foundation for judging all evaluation instruments Remmers and Gage state:

> The basic characteristics of evaluation devices are (1) validity, which consists of (a) relevance and (b) reliability, (2) administrability, and (3) interpretability. (28, 122)

In this study the primary concern is with the validity of the Cognitive Preference Test in the Social Sciences.

TABLE 1

COMPOSITION OF THE SAMPLE BY SCHOOLS AND CLASSES

Schools	Classes	N
Grant and Edison Junior High Schools Springfield, Illinois	4	19
Grove and Dempster Junior High Schools Elk Grove, Illinois	3	14
Marion Junior High School Marion, Illinois	2	13
University High School Urbana, Illinois	1	6
Herrin Junior High School Herrin, Illinois	1	5
Sterling Junior High School Sterling, Illinois	1	5
Roxana Junior High School Roxana, Illinois	1	2

Reference is again made to the work of Remmers and Gage for a general statement of the conception of validity. They state:

> The validity of an evaluation device is the degree to which it measures what it is intended to measure. . . . The degree to which a test measures anything, and measures it accurately, is the reliability of the test. "What it is intended to measure" is the criterion for the relevance of the test. (28, 122-123)

The empirical analysis of the Cognitive Preference Test in the Social Sciences begins with an analysis of the reliability of the test. However, the concept of reliability has different usages and it is necessary at the outset to clarify the use of reliability employed in this study.

The different uses of the term "reliability" can perhaps be simply illustrated by reference to the foot rule as a measuring device. Suppose that a person wants to measure the length of a board. He might make some repeated measurements of the board with a foot rule and compare the agreement, or lack of agreement, of the different measurements. In this case the person would be concerned with the stability of his measurements. That is, he would be concerned to see if repeated measurements with the same device produce a similar quantity.

Let us now suppose that the person has some doubt about the precision of his foot rule. The rule may be warped or damaged in some way. In this case he might measure the length of the board with his "suspect" foot rule, and then check his first measurement with the measurement obtained from a second foot rule. In this situation the person would be concerned with the equivalence of the two instruments.

Finally, let us suppose that all a person has available is one foot rule and he has some doubt about its accuracy.

How can he check the accuracy of his measurement with this foot rule? One approach would be to see if different parts of the foot rule, i.e., the spaces representing inches, measure a single part of the board equally. That is, does a space labeled one inch at the left end of the foot rule measure a space on the board (1) equal to that measured by a space labeled one inch at the right end of the foot rule and (2) equal to that measured by a space labeled one inch in the middle of the foot rule? In this case he would be concerned with the internal consistency of the measuring device.

As in the examples employing the foot rule, the methods of estimating the reliability of tests all involve some method of securing at least two measures with the same instrument or with different forms of the same instrument and determining the agreement between the measures.

Since only one form of the Cognitive Preference Test in the Social Sciences has been developed, the method of obtaining measurements with two separate devices and comparing the agreement between them was not possible. Consequently, the equivalent-forms method of estimating reliability was precluded and we shall not use reliability in the sense of the equivalence of separate test forms.

In addition, the test-retest method of estimating the reliability of the test was judged not to be feasible for the Project students, because Project instruction was provided during the intervening time period required for retesting. It was hypothesized that genuine growth and changes in individuals would result from the Project instruction and thus the test-retest reliability coefficient would be lowered because of these changes. In consequence, we shall not refer to the reliability as the stability of measurements.

Two remaining methods for estimating the reliability of a test are based on the analysis of test data obtained on one occasion. These methods are the split-half method and the method of "rational equivalence." The method of "rational equivalence" stresses the intercorrelations of the items in a test and the correlations of the items with the test as a whole. In this study the method of "rational equivalence" was utilized in preference to the split-half method because homogeneity of function measured is a basic assumption underlying cognitive preference responses. That is, each item in the cognitive preference test is assumed to measure the same factor or the same weighted combination of factors as every other item.

R. L. Thorndike and others have stated that the most generally useful of the formulas for estimating reliability

from the relationship of total test variance to item variance is Kuder-Richardson formula No. 20. (34, 587)

This formula is

$$r_{tt} = \frac{n}{n-1} \cdot \frac{S_t - \sum_{i=1}^{n} p_i q_i}{S_t^2}$$

where

r_{tt} = reliability of the total test,

n = number of items in the test,

S_t^2 = variance of the total test,

p_i = proportion passing item i,

q_i = $1 - p_i$

Some writers have objected to any use of the term "reliability" for measures of consistency based on analysis of the items in a single test and insist that measures of this type refer to "internal consistency." R. L. Thorndike indicates that the basic difference between the measures of consistency based on analysis of the items in a single test and those obtained by correlating scores on equivalent forms of a test is found in the relationship of homogeneity of functions measured to consistency of performance. Thus, in this study reliability will refer to the internal consistency of test scores wherein homogeneity of function measured is the basic assumption.

The first step in the treatment of data was an item analysis of the Cognitive Preference Test. Table 2 is a summary of the item analysis statistics.

These item analyses revealed several non-functional items. That is, many of the item-test score correlations are either low, or near zero, or negative. The low order of magnitude of the mean biserial correlations,with the possible exception of that for the knowledge of specific facts scale, suggests that heterogeneity of response occurs in the test from item to item or from one group of items to another. Now, if it is true that several of the items in the Cognitive Preference Test either measure different responses from that measured by other items or break down into heterogeneous groups, then it would seem defensible to assemble items into closely homogeneous groups for item analysis purposes. However, it has been indicated earlier that homogeniety of function measured is a basic assumption of the Cognitive Preference Test items and hence, we have no a priori bases for subdividing the test items into homogeneous groups that would yield partial-test scores.

An alternative, or perhaps a supplement, to a priori bases for assembling items into heterogeneous groups consists of factorial methods wherein factors may be extracted from large matrices of intercorrelations. It is indicated later why factorial methods were judged not to be feasible in this study.

How high should the internal consistency of a test be in order to be considered satisfactory? There is no general answer to this question since a decision in any given case depends on the practical considerations involved in that particular case.

Nevertheless, there appears to be some consensus in the literature that precise measurements are more crucial in the case of decisions about individuals than in the case of decisions about groups.

TABLE 2

SUMMARY OF ITEM ANALYSES

Cognitive Preference Scale	Social Science Curriculum Study Project Students (N = 64) $\bar{r}_{bis}$	r_{tt}
Knowledge of Specific Facts	.375	.826
Knowledge of Terms	.192	.344
Knowledge of Principles and Generalizations	.258	.667
Knowledge of Methodology	.229	.591

$\bar{r}_{bis}$ = mean biserial correlation of items with total scale score

r_{tt} = Kuder-Richardson Formula No. 20 reliability coefficient

In his discussion of evaluation for course improvement Lee Cronbach states:

> . . . I am becoming convinced that some techniques and habits of thought of the evaluation specialist are ill-suited to current curriculum studies. . . . Much of test theory and test technology has been concerned with making measurements precise. Important though precision is for most decisions about individuals, I shall argue that in evaluating courses (decisions about groups) we need not struggle to obtain precise scores for individuals. (9, 231-233)

Many years ago (1927) Truman Kelley offered an answer to the question of how reliable a test must be to be used for different types of testing projects, and his answer, though somewhat arbitrary, has since been widely quoted. Kelley arrived at the following as the minimum correlation for different purposes:

a) To evaluate level of group accomplishment.... .50
b) To evaluate differences in level of group accomplishment in two or more performances... .90
c) To evaluate level of individual accomplishment..... .94
d) To evaluate differences in level of individual accomplishment in two or more performances... .98
(34, 609)

In his discussion of the reliability of test scores Henry E. Garrett has stated that:

> To distinguish reliably between the means of two relatively small groups of narrow range of ability (for example, a fifth and a sixth grade) a reliability coefficient need be no higher than .50 or .60. If the test is to be used to differentiate among the individuals in the group, however, its reliability should be .90 or more. (16, 338)

Finally, in their consideration of how high the reliability coefficient should be, Remmers and Gage state that:

> In general, most standardized tests published for use in schools have reliability coefficients, of one kind or another, of at least .80 in the populations for which they are designed. For research purposes, psychologists may find tests useful if their reliability coefficients are as low as .50. (28, 140-141)

On the basis of the guideline suggested in the literature it is concluded that three of the four cognitive preference scales are reliable enough for research purposes. The remaining cognitive preference scale, knowledge of terms, is judged (in its present form) to be not sufficiently reliable for research purposes.

Validity Data, Cognitive Preference Test

It has been stated earlier that the conceptual components of test validity are reliability and relevance. Moreover, it has been shown that three of the four cognitive preference scales are reliable enough for research purposes, while the knowledge of terms scale is not sufficiently reliable. The interpretation of subsequent statistics bearing on the empirical relevance of the cognitive preference scales will be somewhat obscured by the fact that the reliability coefficients were found to be in the intermediate range.

Turning now to the problem of judging or estimating the relevance of the Cognitive Preference Test to what the test was intended to measure, i.e., the disposition to respond consistently to the general or particular features of social phenomena, it is noted that there are two main approaches to the problem of estimating test relevance. These approaches are, respectively, logical relevance and empirical relevance. These two approaches to estimating test relevance will now be dealt with in the order listed above.

Logical Relevance

In their analysis of logical relevance Remmers and Gage state that:

> Criteria against which the logical relevance of a test may be determined may take the following forms: analyses of courses of study and jobs, statements of instructional objectives, analyses of textbooks, analyses of teachers' final examination questions, pooled judgments of competent persons, concepts of social utility, and, especially, logical or psychological analyses of mental processes, motor performances, or other behaviors. (28, 124)

It should be noted that, in the above quotation, Remmers and Gage emphasize logical or psychological analyses of cognitive processes and other behaviors as important sources of criteria against which to determine the logical relevance of a test. The writer believes that it was essentially this type of

logical, dispositional, and behavioral analyses of cognitive processes and affective behaviors that was undertaken in the second and third chapters of the present study. In brief, procedures were identified and applied by which immediate educational objectives were derived from more ultimate educational objectives, i.e., the preferences for different types of knowledge were derived from the knowledge and responding categories of the two Taxonomies of Educational Objectives.

If the contents, operations, and the situations set by the Cognitive Preference Test are essentially those specified by a set of analytically-derived immediate objectives, i.e., the third chapter of this study describes how the four alternatives in each test question were ultimately derived from sub-categories in the Taxonomy of Educational Objectives: Cognitive Domain, then the Cognitive Preference Test may be said to possess logical relevance. The test is logically relevant to the derived immediate criteria, and the latter are logically relevant to the ultimate criteria.

And thus, perhaps the best available evidence in support of the relevance of the Cognitive Preference Test has already been cited. The chain of reasoning that began with the current curricular emphasis on affective objectives, proceeded to categories and sub-categories in the two Taxonomies of

Educational Objectives, illustrated the categories and subcategories as educational objectives in the classroom, and finished with a forty-item test of cognitive preferences, provides the logical links basic to a claim of test relevance.

Curricular Relevance

There are two important reasons for dealing with the concept of curricular relevance in this context. The first reason is suggested by Remmers and Gage in their statement that:

> Relevance must always refer to a specific purpose or objective and a specific group of pupils. (28, 123)

The reason for this seems to be that the meaning of test relevance may shift from objective to objective, and from group to group. In consequence, as test relevance is discussed in this study it will always refer to specific instructional objectives in relation to specific groups of students. In the case of the curricular relevance of the Cognitive Preference Test in the Social Sciences, relevance will refer to specific objectives of the University of Illinois Social Science Curriculum Study Project and to the Project students who were taught materials developed by the Project.

The second reason for dealing with the concept of curricular relevance in this context is that curricular relevance

is a special case of logical relevance. That is, curricular relevance is viewed as the logical relation between immediate educational objectives and the tasks or operations set by a test, while logical relevance is viewed as the logical relation among test tasks or operations, immediate educational objectives, and ultimate educational objectives. If this line of reasoning is correct, then establishment of the curricular relevance of a test would bolster the laim that the test has logical relevance.

Criteria against which the curricular relevance of a test may be judged often include the following: statements of instructional objectives, analyses of instructional materials, and analyses of examination questions. The analysis of the curricular relevance of the Cognitive Preference Test begins with an examination of instructional objectives formulated by the University of Illinois Social Science Curriculum Study Project.

In their project description, the authors of the Social Science Curriculum Study Project state the following objectives:

> Instructional materials appropriate to teaching the concepts, generalizations, skills in social analysis, and attitudes are selected using the best of existing materials and developing new materials to achieve the objectives of the new social studies program. (Appendix C, 168)
>
> Beginning with a study of man's social institution, the family, the student examines the American family today using the methods of the social scientist wherever appropriate. (Appendix C, 171)

> Materials that provide for the development of these and other essential concepts basic to understanding man's social order, equip the individual student with the analytic tools to critically examine the structure of his own and other selected societies in time and place. (Appendix C, 172)
>
> Concepts and generalizations drawn from geography, in the main, are used as analytic tools to understand man interacting with his physical environment. (Appendix C , 173)
>
> These concepts and generalizations become increasingly operative as tools of social analysis when the student uses them in new situations to extend his understanding of the structure of European civilization in each of six periods in Europe's development. (Appendix C, 173)
>
> The concepts of socialization, scarcity, and power introduced in Course I and used as analytic tools in Course II are used again for analysis in Course III when students examine the structure of each of the regional cultures. (Appendix C, 174)

It is believed that the above statements of objectives either identify or point to, with sufficient clarity for communication, some of the basic goals of the University of Illinois Social Science Curriculum Study Project. In brief, these goals are that students learn to (1) respond willingly to the subtle and generic features of cultural contexts, (2) differentiate between the presence or absence of selected characteristics and relationships in a variety of cultural contexts, (3) utilize these characteristics and relationships in the processes of observing, describing, and analyzing social phenomena, and

(4) apply some rudimentary standards of social scientists in testing conclusions about social phenomena.

The first project goal, that of guiding students to respond willingly to the subtle and generic features of cultural contexts, is clearly related to such ultimate educational objectives as the affective objectives mentioned by curriculum evaluators and the responding category outlined by the authors of The Taxonomy of Educational Objectives: Affective Domain. Whether or not the first Project goal is related to the tasks set for students in the Project instructional materials constitutes our next question.

However, the examination of the Project instructional materials should be prefaced by a word of caution. These instructional materials do not look like typical instructional materials. They do not confront the student with extensive narrative materials or with topically-arranged statements of definitions, conclusions, and value judgments. Instead, the Project materials confront the student with sequentially-developed sets of directions, statements, sources of data, questions, and spaces for written or active responses by the student, in sum, with tasks that facilitate the reorganization, by the student, of increasingly larger segments of experience.

The following examples of Project materials, taken directly from Student Manuals, illustrate both the format and

the tasks structured by the new instructional materials:

Example 1.

5. Now we come to a difficult problem. How can we get answers to these questions? We know there are certain books that might help us and some organizations (such as the Census Bureau) that have information but let's assume that we want to find the answers on our own. What would be the best way to get information about these questions, for example?

a. What is the average size of the American family?

Best way to find out: _____

_____

b. What attitudes do children have toward their parents?

_____

c. How do mothers treat young babies?

Best way to find out: _____

_____

6. After listening to the suggestions of others in the class, what general ways do you see open to us, to gain information we need to answer our questions?

a. _____
b. _____
c. _____
d. _____

7. Might you possibly get inaccurate or incomplete information about the family using these methods? Why?

Method	Why Information Inaccurate or Incomplete
_____	_____
_____	_____

(32, 2)

Example 2.

WHAT PART DOES EACH MEMBER OF THE MODERN AMERICAN FAMILY PLAY?

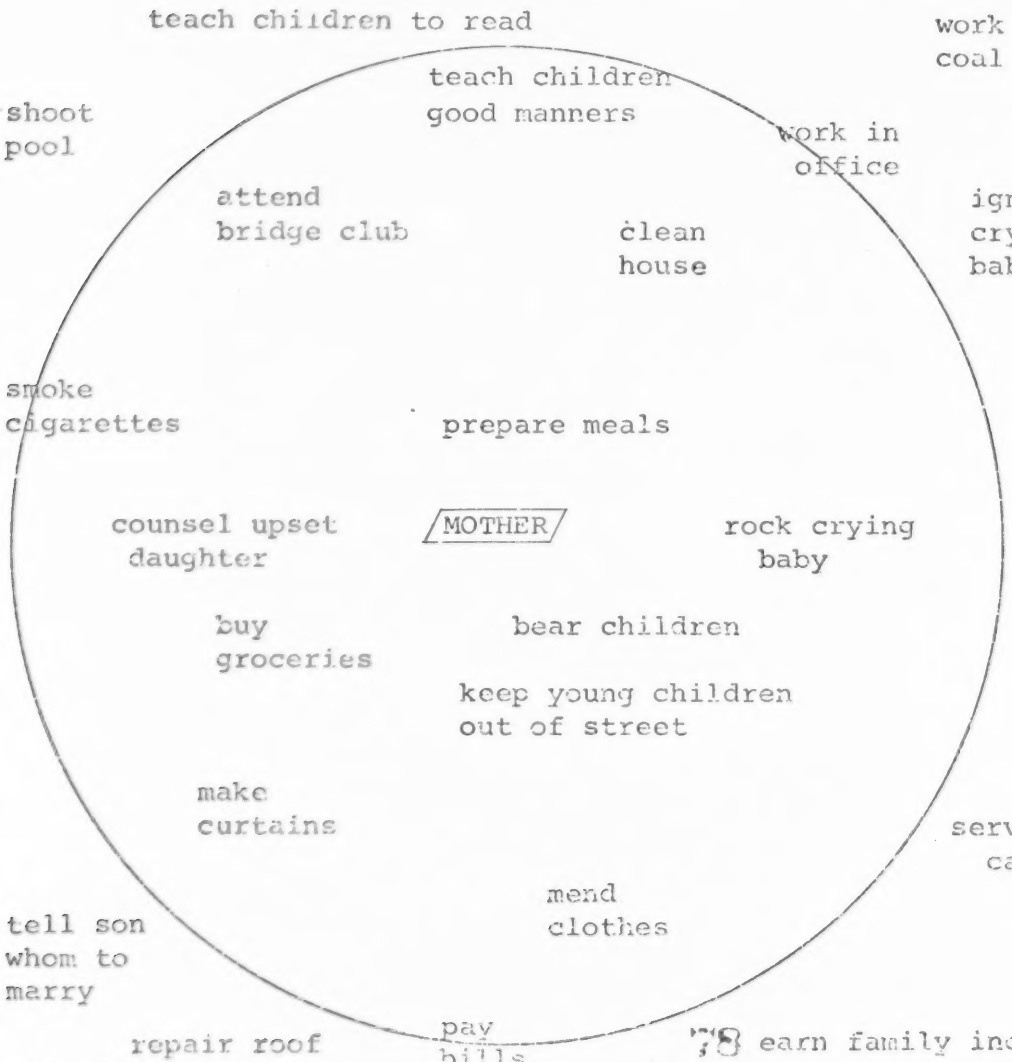
1. Below is a circle which represents the mother of the modern American family. Some activities have been placed inside the circle, some outside. A few have been placed on the line. Why do you think the activities which fall inside the circle were placed there? _____

_____

Why were the activities which fall outside the circle placed there? _____

_____

_____



(32, 42)

Example 3.

3. The data supplied in Table 3 deal with the number of births and deaths for the period 1900-1962. When reference is made to this kind of data the number of births and deaths is in terms of so many births or deaths per thousand people in the nation's population.

Table 3. Births and Deaths: 1900-1962

Year	Births (Per Thousand population)	Deaths (Per Thousand population)	Life Expectancy (at birth, in years) Male	Female
1900	32.8	17.2	46.3	48.3
1905	-	15.9	47.3	50.2
1910	30.1	14.7	48.4	51.8
1915	29.5	13.2	52.5	56.8
1920	27.7	13.0	53.6	54.6
1925	25.1	11.7	57.6	60.6
1930	21.3	11.3	58.1	61.6
1935	18.7	10.9	59.9	63.9
1940	19.4	10.8	60.8	65.2
1945	20.4	10.6	63.6	67.9
1950	24.1	9.6	65.6	71.1
1955	25.6	9.3	66.6	72.7
1956	25.2	9.4	66.7	73.0
1957	25.3	9.6	66.3	72.5
1958	24.6	9.5	66.4	72.7
1959	24.3	9.4	66.5	73.0
1960	23.7	9.5	66.6	73.1
1961	23.3	9.3		
1962	22.4	9.5		

Source: Twentieth Century Fund. 1964

USING THE DATA GIVEN IN TABLE 3 ABOVE

3.1 Compare the nation's birthrate in 1962 with 1900; with 1935. What do these data tell you?

3.2 Compare the nation's death rate in 1962 with 1900.

3.3 What do these data on Table 3 tell you about the nation's birth and death rate for the period, 1900-1962?

3.4 How many years could a male child born in 1900 expect to live?

_____

How many years could a male child born in 1960 expect to live?

_____

Locate the year nearest your year of birth and determine how long you can expect to live.

_____

3.5 Compare the life expectancy of a female child born in 1900 and 1960 with that of a male child.

3.6 What reasons can you give for the trends in death rate and life expectancy, 1900-1962, on Table 3?

3.7 What inferences can you make about growth of the U. S. Population, Table 1, from your answers 3.1 through 3.6? Enter below in clearly written statements.

_____
_____
_____
_____
_____
_____

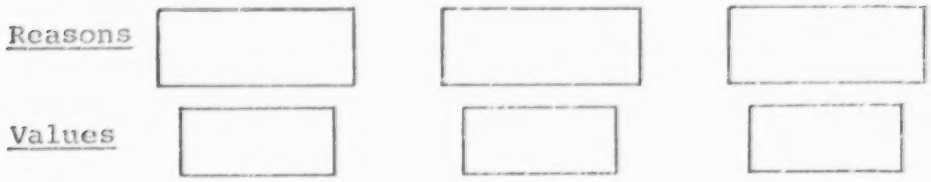
(30, 97-98)

Example 4.

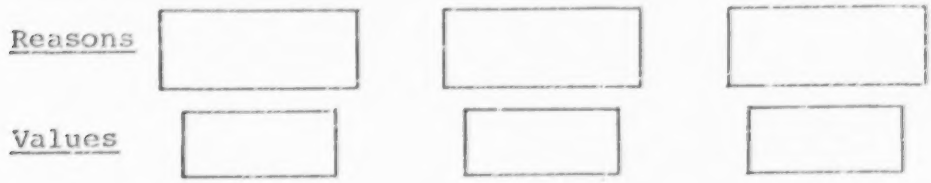
POLITICAL ISSUES

1. For the next few days you will be playing a game which illustrates some political processes. Play it like you would any game--to win--but try to remember what happens as the game unfolds. We will be referring to things that occur in the game later in our study.

3. What was your position on downtown redevelopment? For_____ Against_____
What reasons did you give for your position in the negotiations? Put them in the boxes entitled "reasons."



As you discuss these items in class, listen for reasons that your friends used in the negotiation. Add them in the boxes below.



If these are the reasons that people felt the way they did on an issue, they probably concern things that are viewed as desirable in one way or another by that person. We will call these "desirable" things values since they represent something the individual views as valuable. What are the values underlying the reasons you have listed? Put them in the boxes below the reasons and draw arrows to those reasons that rest upon that value. (33, 1-2)

Examples one through four of instructional materials from the Illinois Social Science Curriculum Study Project illustrate that the content of instructional materials is not to be thought of solely in terms of the content of instructional situations but also in terms of the kinds of responses the situations are capable of evoking. It is concluded that each of the four instructional situations represented above is capable

of evoking responses to the subtle and generic features of these situations. This instructional emphasis is consistent with an important goal of the University of Illinois Social Science Curriculum Study Project and with more ultimate educational objectives identified by curriculum evaluators on the national scene and the authors of the Taxonomy of Educational Objectives: Affective Domain.

On the other hand, it is also concluded that each of the four instructional situations represented above is capable of evoking responses to the immediate and particular features of these situations. This is to say that instructional objectives are plural and sequential. That is, what may be an important emphasis or goal at one stage in the developmental process may not be an important emphasis or goal at another stage. Or, to put it differently, what may be in the foreground in one instructional situation may properly be in the background in another instructional situation.

The final step in the search for curricular relevance of the Cognitive Preference Test consists in determining whether or not the tasks set by Project examination questions are consistent with the responses elicited by the Cognitive Preference Test. That is, are the immediate objectives of the Project, as represented in Project achievement test questions, represented in the behaviors required to deal with the questions in the

Cognitive Preference Test?

In order to deal with this question, an inspection will be made of test questions taken directly from a test designed to evaluate achievement in the Illinois Social Science Curriculum Study Project materials. The test questions follow:

> 4. Assume that your job is to find out how students in your school feel about expanding the war in Vietnam. Assume further that you are interested in saving time and money and consequently, you will only ask a sample of students from your school about their opinion. You will then utilize the findings based on the sample to generalize about the opinion of all the students.
>
> Which of the following samples would probably involve the least amount of error for this purpose?
>
> (A) Students in your school who read at least one library book each week
> (B) The members of the school's athletic teams
> (C) Students in your school who usually make the honor roll
> (D) Students in your school whose first name begins with an "R"
> (E) Students in your school who participate most in extra-curricular activities.
>
> (31, 3)

> 29. Imagine that you are an economist, one of a team of social scientists employed by the United States Department of State. You are to carefully observe the economic operations of a newly-emerged nation and provide a tentative description of how its economic activity is organized.
>
> The answer to which of the following questions would provide you with the most useful information necessary for the job?
>
> (A) Is there a high rate of illiteracy in this nation?
> (B) Who decides what will be produced?
> (C) Is there a problem of scarcity?

(D) What kinds of natural resources does the nation have?
(E) Is the economic system undergoing some change?
(31, 18)

Question 33 refers to the following information:

What the United States Could Do
With 20 Billions of Dollars

For no more money than the moon program is expected to cost, the country could do any one of these things:

I. Build 20,000 miles of superhighways across the country.
II. Retire the mortgage debt on every U. S. farm.
III. Give every family in the United States more than $4,000.
IV. Build an antimissile defense to protect every big city in the country.

33. Which of the following economic principles is represented in the situation described above?

(A) Goods used in the production of other goods, i.e., machines, tools, and the like, require large outlays of money.
(B) The amount of labor available in the U.S. economy is not fixed.
(C) Human resources include labor and management.
(D) Scarcity requires choosing among competing goals.
(E) Most human material wants can be satisfied once and for all.
(31, 20)

Question 39 refers to the following information:

On race relations, the Supreme Court of the United States continues its practice of recent years in ruling against all attempts at discrimination.

A unanimous decision by the Supreme Court held that the Alabama legislature could not change the boundaries of the city of Tuskegee in order to deprive Negroes of the right to vote.

Another ruling by the Supreme Court held that restaurants in interstate bus terminals could not refuse to serve Negroes if the eating place is "a necessary part of the bus carrier's transportation service."

39. Which of the following political principles is best illustrated by the information above?

(A) The political system helps to deal with conflicts about what people view as desirable.
(B) The political system may provide the opportunity for widespread adult participation in decision making.
(C) The leaders in a political system try to support their actions with an idea of rightness.
(D) The authority to make political decisions is usually limited in some way.
(E) Political resources are distributed unevenly among the adult members of a society.
(31, 26)

Each of the four test questions shown above outlines a situation that is related to a social-science principle. These situations are assumed to be novel to the Project students, i.e., the social-science principles involved were not taught to the Project students in the context of these situations. Consequently, the task set for the student in each test question is that of identifying which principle or pattern best subsumes the various data included in the situation. Clearly, the willingness to respond to the subtle and generic features of social phenomena can be subsumed under the capacities required to identify the principles or patterns that unify disparate data.

In general, it is believed that considerable support has been provided for the claim that the Cognitive Preference Test in the Social Sciences has both curricular and logical relevance to the objectives, instructional materials, and students of the University of Illinois Social Science Curriculum Study Project. This relevance was demonstrated by analyzing logical relationships among ultimate educational objectives (the two taxonomies of educational objectives), specific educational objectives (some of the objectives and materials of the University of Illinois Social Science Curriculum Study Project), and the tasks set for students by the Cognitive Preference Test in the Social Sciences.

Empirical Relevance

A second approach to the essential task of judging the relevance of a test consists in first administering the test to the group of students for whom the relevance of the test is being estimated. Since this approach requires that student behavior or responses be obtained and analyzed, it is classified under the general heading of empirical relevance.

Now, the general problem involved in estimating the empirical relevance of a test consists in identifying a criterion or standard of behavior that, although external to the test, clearly involves the kind of behavior that the test purports to measure. Concerning the kinds of criterion behavior that might

be utilized in judging the relevance of a test of school "achievement," Remmers and Gage state that:

> Criteria against which empirical relevance of an evaluating device may be determined include the following: school marks, increase in percentage of success in successive ages or grades, differences in scores obtained by any two or more groups known to be widely separated in whatever is being measured, ratings by competent raters, and scores on other tests. (28, 126-127)

The appropriateness of the criteria suggested by Remmers and Gage will now be considered in relation to the Cognitive Preference Test in the Social Sciences. First, school marks or grades given by teachers appear unsatisfactory as a criterion of the cognitive preferences of students because grades are probably influenced by many factors other than those which the cognitive preference test purports to measure. Second, increases in percentage of success (on the test) in successive ages or grades would appear to be a highly appropriate means of establishing the empirical relevance of the Cognitive Preference Test to a group receiving instruction in this dimension. However, this approach would require repeated test administrations to a group of students over a period of years, and for this reason it was not considered feasible in this study. Third, ratings by competent raters was not attempted because preliminary investigations indicated that demonstration teachers of

Project materials, staff members of the Project, and a specialist in teacher education did not presume to know their students in terms of cognitive preference categories in the social sciences.

Actually three separate methods of judging the empirical relevance of the Cognitive Preference Test for particular groups of students were employed. These methods were: (1) a comparison of group means on the cognitive preference scales for Project students, (2) correlations among cognitive preference scale scores and other test scores for Project students, and (3) comparisons of group means on the cognitive preference scales for Project students and Graduate students. Each of these three approaches to judging the empirical relevance of the Cognitive Preference Test will now be discussed.

The means and standard deviations of all tests, given to the Project group during the academic year 1954-1955, were computed. Table 3 shows these statistics which are based on a systematic sample of 64 Project students.

Inspection of Table 3 tends to confirm hypothesis 1, stated in Chapter I of this study. The Project group, on the average, demonstrates a more frequent preference for the general features of social situations than for the particular features of social situations. That is, the Project group, on the

average, demonstrates a more frequent preference for knowledge of principle and knowledge of methodology than for knowledge of term and knowledge of specific fact. In addition, the average preference for knowledge of specific fact is significantly different from the average preference for knowledge of term; the average preference for knowledge of term is significantly different from the average preference for knowledge of methodology; and the average preference for knowledge of methodology is significantly different from the average preference for knowledge of principle. In sum, the difference between the means in each of the three comparisons mentioned above is too large to be accounted for by sampling errors.

Since the obtained differences in the cognitive preferences of Project students were (1) statistically significant and (2) in the predicted direction, i.e., it would be predicted from the objectives, instructional materials, and test questions identified in the Project that Project students would learn to respond willingly to the general features of social phenomena, then some credence is given to the claim that the Cognitive Preference Test has empirical relevance for the Project students.

Table 3

Summary Statistics of Project Group

	Project Group (N = 64)	
	Mean Score	Standard Deviation
School and College Ability Test (SCAT), Form 3A	72	12.8
STEP, Social Studies	56	6.5
Project Pre-Test	25.9	5.8
Project Post-Test	27	7.9
Cognitive Preference: Specific Fact	5.14*	4.7
Cognitive Preference: Term	8.39*	3.1
Cognitive Preference: Methodology	11.89*	4.3
Cognitive Preference: Principle	14.58*	4.9

* $p < .05$ that the difference between the means is zero

Table 4 shows the intercorrelations of student test scores of the eight variables for the Project students. Analysis of Table 4 provides partial confirmation for hypothesis 2, stated in Chapter I of this study. That is, for Project students a preference for the general features of social situations is more positively related to project achievement test

scores than is a preference for the particular features of social situations. It is clear that Project students who prefer knowledge of principles find themselves at an advantage on the project post test (r = .35). Conversely, Project students who prefer knowledge of terms and knowledge of facts find themselves at a disadvantage on the project post test (r = -.32 and r = -.07).

Table 4

Intercorrelations of Student Test Scores

	Social Science Curriculum Study Project Group (N = 64)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SCAT							
STEP, Social Studies	.80*						
Project Pre-Test	.63*	.64*					
Project Post-Test	.74*	.80*	.60*				
Cog. Pref.: Fact	-.12	-.27*	-.13	-.07			
Cog. Pref.: Term	-.30*	-.16	-.30*	-.32*	-.41*		
Cog. Pref.: Method	.06	.04	.00	.01	-.42*	-.33*	
Cog. Pref.: Principle	.35*	.48*	.35*	.34*	-.71*	.08	-.05

*p < .05 that "r" does not differ from zero

These correlations, two of which are statistically significant ($r = .35$ and $r = -.32$), are consistent with the objectives of the Project course. That is, in a curriculum where the emphasis is on knowledge of principles, it would be predicted that students who prefer knowledge of principles would tend to achieve more than students who prefer knowledge of specifics. Since these predictions are confirmed by the obtained correlations ($r = .35$ and $r = -.32$), then additional credence is given to the claim that the Cognitive Preference Test has empirical relevance for the Project students.

Table 5 shows the means and standard deviations of the four cognitive preference scales for both Project and Graduate students. Study of Table 5 tends to confirm hypothesis 3, stated in Chapter I of this study. The Graduate group, on the average, demonstrates a more frequent preference for the general features of social situations than for the particular features of social situations. Once again, as in the case of the Project students, it would be predicted from emphases in graduate teacher education curricula in the social studies that Graduate students would learn to respond willingly to the general features of social phenomena. Emphases on generic features would tend to be in the foreground in those teacher-education activities concerned with the structure of knowledge in the social sciences,

methodology in the social sciences, the selection and validation of objectives in the social studies, the evaluation of learning outcomes in the social studies, and research dealing with significant variables in the learning process. Emphases on generic features would tend to be in the background in those teacher-education activities focused on the data-collection phase of the reflective process and the instantiation of concepts and theoretical principles.

Table 5

Summary Statistics of Project and Graduate Groups

	Project Group (N = 64)		Graduate Group (N = 19)	
	Mean Score	Standard Deviation	Mean Score	Standard Deviation
Cognitive Preference: Specific Fact	5.1	4.7	4.7	6.3
Cognitive Preference: Term	8.4	3.1	5.6	2.9
Cognitive Preference: Methodology	11.9	4.3	13.5	3.8
Cognitive Preference: Principle	14.6	4.9	16.2	5.2

Since the obtained differences in the cognitive preferences of Graduate students are in the predicted direction, then some credence is given to the claim that the Cognitive Preference Test has empirical relevance for the Graduate students tested in this study.

Analysis of Table 5 also tends to confirm hypothesis 4, stated in Chapter I of this study. The Graduate group, on the average, demonstrates a more frequent preference for the general features of social situations than the Project students do. While the differences in cognitive preferences obtained for Graduate and Project students do not represent the classical situation of differences in scores obtained by any two or more groups known to be widely separated in whatever is being measured, it is believed that an approximation of the classical situation is represented by the comparison of the Graduate and Project students on their respective cognitive preferences. That is, we have good reason to believe that the Project materials emphasize responding to the generic features of social data and we have some grounds for believing that the cumulative effect of prolonged training in the social sciences and social studies education would be an emphasis on responding to the generic features of social phenomena. In consequence of these beliefs or partially-warranted assumptions, it would be predicted that Graduate students would demonstrate a more frequent preference

for the general features of social situations than the Project students. Since the obtained differences between the two groups are in the predicted direction, then additional support is given to the claim that the Cognitive Preference Test has empirical relevance for both the Graduate students and the Project students.

Construct Validity

Although the conception of construct validity is a recent addition to the repertoire of measurement specialists, it is a conception that has powerful potentialities for explicating the learning process through measurement. That is, since the construct validity of a test focuses on responses, i.e., what a student is expected to do with ideas or feelings, then evaluation studies employing tests of construct validity may go beyond reporting on specific courses and assist in the understanding of learning in general.

Henry Dyer has stated that if our purpose is to examine meaningful categories within which the behavior of students varies, then we are concerned with the construct validity of a test. (10, 37) Unfortunately, either because of conceptual complexities inherent in the notion of construct validity itself, or because of methodological complexities related to the use of

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factor analysis, the construct validity of most tests is unknown. (10, 41)

Henry Dyer has outlined the logic of construct validation by reference to response categories or dimensions in the content of United States History. He states:

> Suppose, for example, an examiner in U. S. History puts into a test ten questions covering ten different historical periods but each one calling upon the student to demonstrate his "ability to analyze." Suppose further that he puts another ten questions into the test covering the same ten periods but each one calling upon the student to demonstrate his "ability to synthesize." Two constructs of ability are thus hypothesized.
>
> This hypothesis is checked in three steps by reference to the actual responses students make to the questions. First, can a group of, say, twenty examiners, judging independently, agree reasonably well on the classification of the responses into those to be labeled analysis and those to be labeled synthesis? Second, do the responses classified as one or the other tend to hang together empirically? That is, do the responses to the ten questions supposedly testing for analytical ability tend to rank students in approximately the same order, and can the same be said of the responses to questions supposedly testing for ability to synthesize? Third, is the agreement in rank order within one set of responses distinguishably greater on the average than the agreement between the two sets of responses? If the answers to all three questions are in the affirmative, then it can be said that the test is measuring at least two valid constructs. (10, 40)

Clearly, the present study is concerned with the measurement of meaningful dimensions of student responses. In consequence, it would seem appropriate that factor analysis be employed as a method of teasing out the response dimensions that have assumedly been built into the test of cognitive preference. However, certain necessary cautions must be exercised in the use of factor analysis, as in the use of other statistical techniques.

Ann Anastasi has proposed a fundamental consideration concerning the use of factor analysis. She states:

> Since all techniques of factor analysis begin with intercorrelations, any conditions that affect correlation coefficients will also influence factor loadings. (1, 335)

The following discussion of the conditions that influence correlation coefficients and consequently affect factor loadings is based largely on relevant analyses by Anastasi and R. L. Thorndike located in previously-cited sources. The discussion relates conditions that influence correlation coefficients to established characteristics of the Project sample and the Cognitive Preference Test.

It is of basic importance that a sufficient number of persons be employed so as to yield stable correlations, i.e., the sample size must be large enough to provide stable data. Employing 100 cases, a correlation coefficient must be .195 to

be significantly greater than zero at the .05 level. With 64 cases, the size of the Project sample, correlations may vary so greatly from sample to sample that any resulting factor loadings would be suspect.

Second, the correlation between two variables is markedly affected by the range of the variables. For example, the correlation between academic aptitude and academic achievement will be much greater for a school population than for a given grade. Now it has been reported in an earlier section of this chapter that the Project sample is restricted on the aptitude range. That is, most of the Project students are located between the eightieth and the ninety-ninth percentile in academic aptitude. Further, statistically significant correlations have been obtained between academic aptitude and preference for principles, .35, and between academic aptitude and preference for terms, -.30. It is believed that selectivity in the Project group operates to lower the true variance on the aptitude variable, and to a lesser extent on the cognitive preference variables. In consequence, the correlation between academic aptitude and various cognitive preferences is reduced. Since the Cognitive Preference Test is ultimately intended for use within the full range of academic aptitude, the resulting factor loadings based on truncated variables would be restrictive.

Third, the tests used in factor analysis should have high reliabilities. Unreliable tests can contribute very little to the identification of factors. It has already been shown in this chapter that the reliabilities of the cognitive preference scales are generally in the intermediate range, with the exception of the preference for terms scale which was judged to be unreliable. The net effect of the obtained reliabilities would be to obscure factor loadings should they obtain.

Finally, it has been suggested that measures which yield ipsative scores, in which the person's performance is expressed with reference to his own mean, are not suitable for the usual sort of factor analysis. (1, 336) Scores on the Cognitive Preference Test illustrate this procedure. It is impossible for a person to obtain high scores on all four parts of this test, or low scores on all four parts. A high score on one part of the test must be balanced by low scores on other parts. If ipsative scores are intercorrelated, some negative correlations must necessarily result simply as an artifact of the scoring procedures. Again, the resulting factor loadings would be suspect.

For these reasons it was decided not to employ factor analysis as a method of testing the construct validity of the Cognitive Preference Test at this time. Temporarily, at least, the construct validity of the Cognitive Preference Test, like

that of the great majority of educational tests, will remain unknown. Nevertheless, on the basis of data shown in Table 2, page 62, there is a suggestion that the cognitive preference categories should not be considered homogeneous in function measured. That is, the responses classified as preference for principles, etc. do not tend to cluster together empirically; they tend to fragment. R. L. Thorndike has suggested that the correlation of item with test is analogous to the factor loading of a variable in factor analysis. (34, 599)

In describing the analogy, Thorndike maintains that the part of the variance which is not accounted for by this first factor may be either error variance or variance in other factors. From Table 2 we see that in the preference for principles scale, the average correlation between an item and total test is .258. This leaves 93.4% of the variance which is not accounted for by the first factor. The remaining 93.4% of the variance may be error variance or variance in other factors. However, from the internal consistency reliability coefficient of the scale, .667, we see that two thirds of the total scale variance is true variance or non-error variance. Consequently, most of the true variance, 66.7% - 06.6% = 60.1%, would be accounted for by variance in other factors. Similar reasoning may be applied to the other three cognitive preference scales to show that the scales should not be considered homogeneous in function measured.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

This study was designed to formulate certain affective objectives in communicable terms. The method employed was the development of an exploratory test in which situations were structured so as to elicit student responses to the generic or particular features of social phenomena or data. The conception of cognitive preference for generic or particular features was related to emphases in new curricula and based on comprehensive formulations of educational objectives in the cognitive and affective domains. It was concluded that the exploratory test possessed sufficient reliability for research purposes, in three of the four scales, and that present support for the validity of the test is largely to be found in the realm of logical validity.

Conclusions

In his analysis of Research On Teaching The Social Studies Lawrence Metcalf points to two kinds of researchers of social studies education. He says:

> One group of investigators has worked on building a comprehensive theory of social studies education. This group has pretty much rejected controlled experimentation as a research tool. It claims, however,

> that its theory is not in conflict with well-established facts. Another group has gathered and counted facts without weighing their significance for basic theoretical problems. (26, 962)

The above categorizations of research in social studies education is cited for the purpose of illustrating differences in research focus. Now while it may appear that the present study could readily be classified among those research efforts that gather and count facts "without weighing their significance for basic theoretical problems," the writer believes that such classification would be erroneous. The present study has been related to current emphases in the development of new curricula; it has been related to the search for new dimensions of achievement in the social studies; it has been related to comprehensive taxonomies of educational objectives in the cognitive and affective domains; and it has been related to persistent methodological problems in the validation of educational tests.

It is within the context of relationships between this study and basic trends, purposes, theoretical formulations, and methodological problems in social studies education that the following conclusions are drawn:

1. There is a pressing need for a body of theory relevant to affective objectives in social studies education.

a. There is nothing more practical than theory in the sense that theory leads to hypotheses to be tested, methods to be developed, and conclusions to be interpreted in the light of other theoretically-relevant conclusions.

2. Affective objectives can be stated in communicable terms.

   a. In order to state affective objectives in communicable terms, a carefully-drawn initial formulation of the objectives is a first and not a final step. What seems to be required is a series of transformations of the initial formulations in which terms are employed that are open to the fewest possible interpretations.

3. Project students and a non-randomly selected group of graduate students in social studies education respond with cognitive preferences that can be differentiated.

   a. Project students respond more frequently to the general features of social phenomena than to the particular features of social phenomena.

   b. The cognitive preferences of project students for principles is more positively related to

project achievement test scores than are the cognitive preferences of project students for specific facts and terms.

c. A non-randomly selected group of graduate students in social studies education respond more frequently to the general features of social phenomena than to the particular features of social phenomena.

d. A non-randomly selected group of graduate students in social studies education respond more frequently to the general features of social phenomena than project students do.

4. The categories of cognitive and affective behavior described in the two taxonomies of educational objectives, cognitive and affective domains, tend to be more appropriate descriptions of situations in which certain kinds of responses or behaviors are likely to occur, rather than to be appropriate descriptions of behavior per se.

a. That is, it is not established whether the categories adequately describe processes engaged in by students. Rather, the categories seem to suggest properties or characteristics of situations. This is not to say that the

taxonomy categories are not valuable or useful. Present usage of the taxonomy categories indicates that they are a suggestive source of student response possibilities.

5. It is likely that the demand for behavioral specification of educational objectives is useful, up to a point, but the equating of educational objectives with specific behaviors would seem to imply consequences that many participants in the educational milieu would be unwilling to accept.

   a. For example, the implication in the present study that the willingness to respond to the subtle and generic features of social phenomena is unequivocally to be desired is open to criticism. What about the necessity, at some stage in the inquiry process, to collect facts relevant to the hypothesis at hand? One response to this question would be that flexibility and discretion in the willingness to respond to features of social phenomena represents a more ultimate educational objective than the willingness to respond in a fixed way. It is hoped that this illustration suggests how dispositions

and capacities, rather than specific behaviors, more closely approximate ultimate educational objectives.

6. The multiple-choice test format, i.e., the presentation of stimulus material followed by four or five optional statements, while undoubtedly useful in the item development phase of test construction (because of the direct transfer of knowledge and skills involved), may contribute to reduce the construct validity of the cognitive preference test.

   a. That is, if the investigator's purpose is to identify meaningful response categories or homogeneous functions of student behaviors, then the introduction of response sets would serve to obscure homogeneously-based responses. Such response sets as the tendency to seek a "best" answer or the tendency to seek the statement most relevant to the stimulus material would dilute sources of variance supposedly based on preference or the willingness to respond based on the choice of learned cues.

7. It is not known whether the cognitive preference categories, as defined, are the best possible for describing cognitive preferences in the social studies.

   a. In the first place, the domain of methodology in the social sciences is so varied, dynamic, open-ended, and ambiguous that it is difficult to construct statements of methodology which do not have a considerable overlap with other types of cognitive statements in the social studies. Secondly, data obtained from administrations of the cognitive preference test suggest that the preference for terms is probably based on several different sources of variance. It may be that other kinds of preference are more distinctive, and hence more predictable, in the social sciences.

8. The internal consistency approach to reliability was employed in this study because of the convenience of the operations entailed. That is, a single test and a single administration of the test provides the basis for estimating the internal consistency of the test.

a. However, the method of estimating reliability that seems to be most defensible on logical grounds is the preparation and administration of equivalent test forms. The main objections to this method seem to be practical, relating to the labor involved in producing at least two equivalent test forms. When the investigator's purpose is evaluation of change extending over a considerable period of time, then the appropriate method of estimating the reliability of the instrument would appear to be retest with an equivalent test form over a similar time interval.

9. The logical relevance approach to validity was stressed in this study largely because of the availability of information on which to base this approach. However, logical relevance is viewed not as a substitute for empirical relevance but as a supplement to it.

   a. Once the logical relevance of a test has been established for a particular group, i.e., ultimate objectives are specified, then related to immediate objectives, and subsequently the

> immediate objectives are related to tasks or responses structured by test questions, then it is necessary to investigate the empirical relevance of the test for the same group. Perhaps one of the most effective ways of investigating the empirical relevance of a test is to see how much students have learned, in terms of the dimension assumed to be measured by the test, in consequence of an interval of instruction.

Recommendations for Further Research

Although the Cognitive Preference Test in the Social Sciences was a first draft, an exploratory device, the essentially positive results derived from its use suggest that the instrument can identify student differences in cognitive preferences within a particular curriculum context.

Several possibilities for further research are suggested. It would seem essential at this stage of our knowledge about cognitive preferences to develop a general, nontechnical test of cognitive preferences in the social studies. That is, the stimulus material and the optional statements for each test item should be stated in ordinary language and they should deal with

social phenomena from the vantage point of the layman. The purpose of the general instrument would be to assess the willingness of junior and senior high school students to respond to various features of social phenomena prior to exposure to the selective, focusing operations of social scientists.

A second consideration basic to further research on cognitive preferences concerns the categories within which cognitive preferences are investigated. It has been indicated earlier in this chapter that it is not known whether the cognitive preference categories as defined are the best possible for describing cognitive preferences in the social studies. It has also been indicated that the utility of the methodology and terms categories is suspect.

A comment by E. F. Lindquist suggests a context within which the search for cognitive preference categories may be conducted. He states:

> In general, the functional validity of tests will never far exceed the functional validity of instruction concerned with the same objectives, nor will the validity of instruction far exceed that of the tests. (22, 137)

One interpretation of Lindquist's statement is that it is difficult to measure what is not being taught, and it is difficult to teach what is not being measured. For these reasons, it is believed that future revisions of the Cognitive Preference Test in the Social Sciences may profitably include

such categories as statements of value that rate the efficacy of man's efforts to serve basic social functions and statements that imply the limited and tentative character of knowledge in the social sciences. It is believed that students acquire the disposition to rate social behavior through the informal and formal processes of indoctrination into the culture, and that stress on the partial and transient character of knowledge is to be found in new curricula.

A third consideration fundamental to further research on cognitive preferences relates to the ordering of priorities in program research. Benjamin Fruchter has endorsed a general pattern for ordering research priorities. He states:

> A proper order for research programs might be, first, to use a set of *a priori* measures in a field of investigation and factor analyze them to determine the basic traits or other sources of variance operating; second, to study these factors, one at a time, by the techniques of analysis of variance to determine how they are affected by different experimental conditions or how they vary among groups that differ with respect to age, sex, education, or other pertinent background variables; and lastly, to study them experimentally in the laboratory for specific groups under carefully controlled conditions. (14, 3)

While Fruchter recognizes that a proper order for research programs is not invariable, the writer would like to add two considerations to Fruchter's outline which seem especially appropriate in program research on school curricula.

The first consideration is that test writers and researchers are at least as concerned with the problem of deciding what to measure as they are with the problem of deciding how to measure. This first consideration leads to a second. It is that curriculum evaluators and researchers are typically concerned, at the outset, to determine whether a curriculum is having any effect on the dimensions they have decided to measure. What is implied herein is that factorial descriptions or dimensions of educational outcomes become important after it has been established that the curriculum is having some effect along "important" dimensions. However, this is not to say that unforeseen effects should be ignored.

Finally, it is believed that further research on cognitive preferences stands to gain much from basic research on cognitive and affective phenomena. As basic elements in cognitive and affective behavior are structured, productive hypotheses concerning dimensions of cognitive preferences will be suggested.

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Appendix A

Numbered Principles From "Human Behavior"

And

Sixty Randomly-Selected Principles

1.	Chapter 3	A1	27.	B15.3	*53.		C8.1
2.		A1.1	28.	B15.4	54.		C9
3.		A1.1a	29.	B15.5	55.		C10
4.		A2	30.	B15.5a	56.		C11
5.		A3	31.	B15.6	57.		C12
6.		A3.1	32.	B15.7	58.		C13
7.		A4	33.	B15.7a	59.		C14
8.		A4.1	34.	B15.8	60.		C15
*9.		B1	* 35.	B16	61.		C16
10.		B2	36.	B16.1	62.		C17
*11.		B3	37.	B16.2	63.		C18
*12.		B3.1	38.	B17	* 64.		C19
13.		B3.2	39.	C1	65.		C20
14.		B4	40.	C1.1	66.		C21
15.		B5	41.	C1.2	67.		C22
16.		B6	42.	C2	68.		C23
17.		B7	43.	C2.1	69.		C24
18.		B8	44.	C2.2	70.		C25
19.		B9	45.	C2.3	71.		C26
20.		B10	46.	C3	72.		C27
21.		B11	47.	C4	73.		C28
22.		B12	48.	C4.1	74.		C29
23.		B13	49.	C5	75.		C30
24.		B14	50.	C6	76.		C30.1
25.		B15.1	* 51.	C7	77.		C30.2
26.		B15.2	52.	C8	78.	Chapter 4	A1

79.	A1.1	110.	B11	141.	A11.1
80.	A2	111.	B11.1	142.	A11.2
81.	A3	112.	B11.2	143.	A11.3
82.	A3.1	113.	B11.3	144.	A11.4
83.	A4	114.	C1.1	145.	A11.5
84.	A4.1	115.	C1.2	146.	A11.5a
85.	A5	116.	C1.3	147.	A11.6
86.	B1	117.	C1.4	148.	A12
87.	B1.1	118.	C1.5	149.	A12.1
88.	B1.2	119.	C1.6	150.	A12.2
89.	B2	120.	C1.7	151.	A13
90.	B3	121.	C2	152.	A14
91.	B3.1	122.	C2.1	153.	A15
92.	B3.2	123.	C3	143.	A16
93.	B3.3	124.	C4	155.	A17
94.	B3.3a	125.	C5	156.	A17.1
95.	B3.4	126. Chap.	5 A1	157.	A18
96.	B3.4a	127.	A1.1	158.	A19
97.	B4	128.	A2	159.	A19.1
98.	B4.1	129.	A3	160.	A19.2
99.	B4.2	* 130.	A4	161.	A20
100.	B4.3	131.	A4.1	162.	A21
101.	B4.4	132.	A5	163.	B1
102.	B5	133.	A6	164.	B2
103.	B6	134.	A7	165.	B3
104.	B7	135.	A7.1	166.	B3.1
105.	B8	136.	A8	167.	B3.2
106.	B8.1	137.	A8.1	168.	B4
107.	B8.2	138.	A9	169.	B4.1
108.	B9	139.	A10	170.	B4.2
109.	B10	140.	A11	171.	B4.3

172.	B5	202.	B17	232.		C5. 3a
173.	B5. 1	203.	B18	233.		C5. 4
174.	B5. 2	204.	B18. 1	234.		C5. 5
175.	B5. 3	205.	B19	235.		C5. 6
176.	B5. 4	206.	B20	236.		C5. 7
177.	B6	207.	B21	237.		C6
178.	B6. 1	*208.	B22	238.		C7
179.	B7	209.	B23	239.		C8
180.	B8	210.	B24	240.		C9
181.	B9	211.	B24. 1	241.		C9. 1
182.	B10	212.	B25	242.	Chap. 6	A1
183.	B10. 1	213.	B26	243.		A2
184.	B10. 2	214.	B27	244.		A2. 1
185.	B11	215.	B27. 1	245.		A2. 2
186.	B12	216.	B28	246.		A2. 3
187.	B12. 1	217.	B29	247.		A2. 4
188.	B12. 2	218.	B29. 1	248.		A2. 5
189.	B12. 2a	219.	B29. 2	249.		A2. 6
190.	B12. 3	220.	B29. 3	250.		A2. 6a
191.	B13	221.	C1	251.		A3
192.	B14	222.	C2	252.		A4
193.	B14. 1	223.	C2. 1	253.		A5
*194.	B15	224.	C2. 1a	254.		A5. 1
195.	B15. 1	225.	C2. 1b	255.		A5. 1a
196.	B15. 1a	226.	C3	256.		B1
197.	B15. 2	227.	C4	257.		B1. 1
198.	B15. 3	228.	C5. 1	258.		B1. 2
199.	B16	*229.	C5. 2	259.		B1. 3
200.	B16. 1	230.	C5. 3	260.		B2
201.	B16. 2	231.	C5. 3a	261.		B3

262.		B4	292.		A4.2	*322.		B5.1
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918.	B8	953.	D2.2a	984.	E6
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924.	C1.2	959.	D3	990.	E10.2
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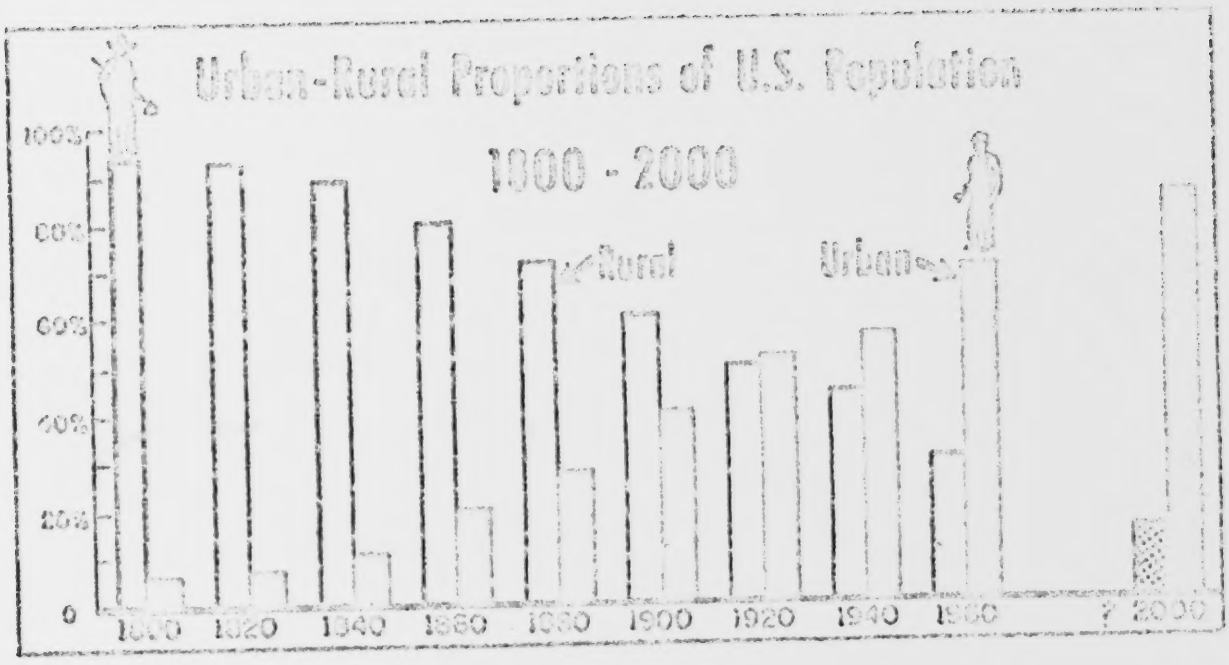
Appendix B

Cognitive Preference Test in the Social Sciences

University of Illinois Social Studies Project

Cognitive Preference Test

Sample question:



__2__ A. The trend shown in the graph is called "urbanization."

__4__ B. In 1890 the United States Census Bureau reported that a frontier line in the West no longer existed.

__1__ C. The classification of persons as urban or rural helps social scientists to identify important similarities among the members of a category.

__3__ D. An important factor in the growth of cities was the spread of industry.

Since each of the above choices is correct, you will have to decide the order in which you prefer the choices . For example, assume that you could select any one of the four choices above as a topic for further investigation. Assume further that, to you, choice B seems to be the most interesting. Next to the letter B you would write the number 4. If choice D were the next in the order of interest you would write the number 3 next to the letter. You would repeat the procedure for the remaining choices, A and C, as shown above.

The following instructions refer to each of the questions in this test:

Warning:

These are not ordinary test questions! Every lettered choice in each test question is correct. In each test question, you are to rank the four choices, numbering them from 4 to 1, in the order of your preferences for, or interest in, the various choices. That is, you are to number the choice you prefer most as 4, the choice you prefer second as 3, the choice you prefer third as 2, and the choice you prefer least as 1.

See example on the next page

The first thing you learn in the Army is to carry out orders unquestioningly. Jim, who had the bunk next to mine, found this hard to do. But, after receiving more than the usual ration of KP and guard duty, he announced that he was giving in; he was going to follow every order--to the letter. So I was surprised to see him on the KP line the following week.

It seems Jim had been assigned to the motor pool, and a surly corporal had ordered him to paint a jeep olive drab.

"Which part, sir?" asked Jim.

"Every part," barked the corporal.

Jim painted the body, the fenders, the wheels, the tires, the seats, and, of course, the windshield--all olive drab.

1. _____ A. Basic training in the army was often as short as eight weeks during World War II.

_____ B. Learning "how to take it" in the army means being willing to see things through.

_____ C. Military administration operates on the assumption that the rank and file of soldiers are either indifferent or non-job oriented.

_____ D. Converting civilians to soldiers requires conformity to the rules of the army.

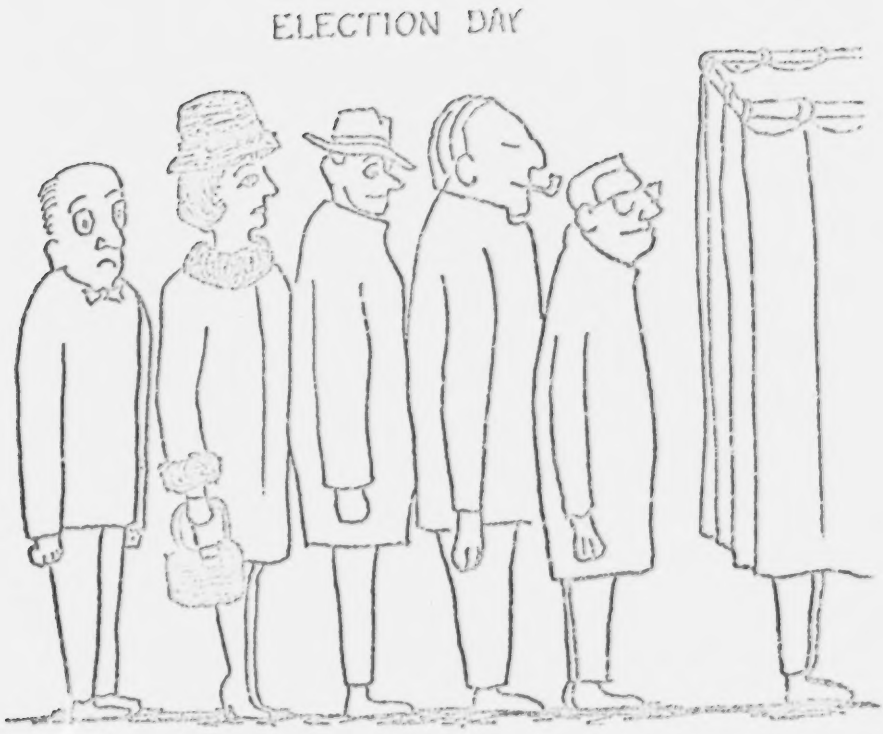
Branch Rickey, general manager of the Brooklyn Dodgers baseball team, engineered a famous example. He put a Negro, Jackie Robinson, on first base in 1947 for the first time in big league history, and backed him to the limit. It took great tact on Robinson's part to survive the first two or three months and avoid a fight with some of the prejudiced players. By August, however, he was an accepted institution, batting, fielding, and running the bases with great brilliance. Other Negroes were then signed by Cleveland and St. Louis. Newspapermen asked Rickey if he had fought for his first baseman in order to solve a sociological problem. "No," said Rickey, "I brought him up for one reason: to win the pennant!"

2. _____ A. The decrease of prejudice is more likely when the ethnic groups meet on personal terms.

_____ B. During World War II, white soldiers who had fought side by side with Negroes in the same company voted 86 per cent in favor of continuing.

_____ C. A race consists of people with a common biological heritage involving certain physical distinctions.

_____ D. No chemist can tell from a blood sample to what race its donor belongs.



3.

_____ A. Men are more active politically than women.

_____ B. Political participation ranges from active campaigning for candidates, to voting.

_____ C. Potential women voters in the United States outnumber men by more than four million.

_____ D. Male-female voting proportions are not based on voter counts, but on estimates from census and voter-registration data.

People today seem to be going merrily about the business of turning Western Europe into one big country. It is in the fields of business and trade that perhaps the greatest changes are noted. Tariff walls are being lowered, slowly but steadily.

Another obstacle to mutual understanding that is beginning to crumble is the difference in languages. The spread of English as the new common language of Europe makes these differences less important.

Most young Europeans are less nationalistic than their parents or grandparents. A political union embracing all of Western Europe is seen by many Europeans as something that may come into being in the distant future.

4. _____ A. The study of cultural change would typically involve intensive examination of many characteristics over a long period of time.

_____ B. Over 100 European firms have joined forces to form Eurospace, an association to promote space research.

_____ C. Cultural change is said to occur when people change their ways of feeling, thinking, or doing.

_____ D. The greater the contact among cultures, the more alike the societies tend to become.

Welfare and relief costs in the District of Columbia in 1964 were 35 per cent more than in 1963.

The District's crime rate for the first six months of 1964 increased 34.7 per cent over the same period of 1963--a rate of increase more than double that for the nation.

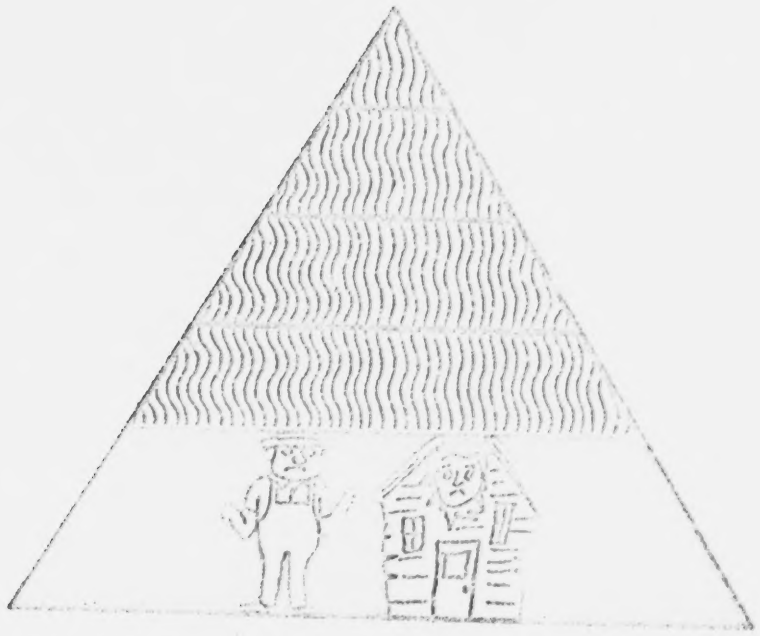
The question now being raised by Washington's example: Just how effective is the President's war on poverty likely to be in combatting crime?

5. _____ A. Crime is more likely among the poor than among the rich.

_____ B. During 1964 there were 30,660 cases of serious crime in the District of Columbia.

_____ C. Crime is often called deviant behavior, i.e., behavior that deviates from what people are generally expected to do.

_____ D. When a change in one characteristic is accompanied by a change in a second characteristic, a relationship is suggested.



Pyramid--Always at the bottom:
the broken homes, jobless

6.

_____ A. The poor may be defined as families in the lowest fifth of the income distribution.

_____ B. The breakup of families is highest among the poor.

_____ C. In 1960, families in the lowest fifth of the income distribution had incomes of under $2,900.

_____ D. Standards of poverty vary from place to place, and they differ from time to time in any one place.

The mass migration from the land since World War II has left less than 8 per cent of the population of the United States on farms.

One farmer described the decline this way, "Along came cars and everybody wanted to live fancy, so they went to the bigger towns. Then came better roads, and finally the railroad let us down and took off the passenger train and closed the depot. First we lost our high school and next year they're closing the grade school. I'm afraid we'll lose our church."

7. _____ A. Population change as determined by the 1960 census provides the basis for the reapportionment of representatives to the United States Congress.

_____ B. The greater the urbanization and industrialization in a society, the fewer farms there are per unit of land.

_____ C. According to the Bureau of the Census, urban communities are those with more than 2,500 inhabitants.

_____ D. From the meager information asked of each person, the decennial census provides facts on which to base an understanding of some major trends in the national life.

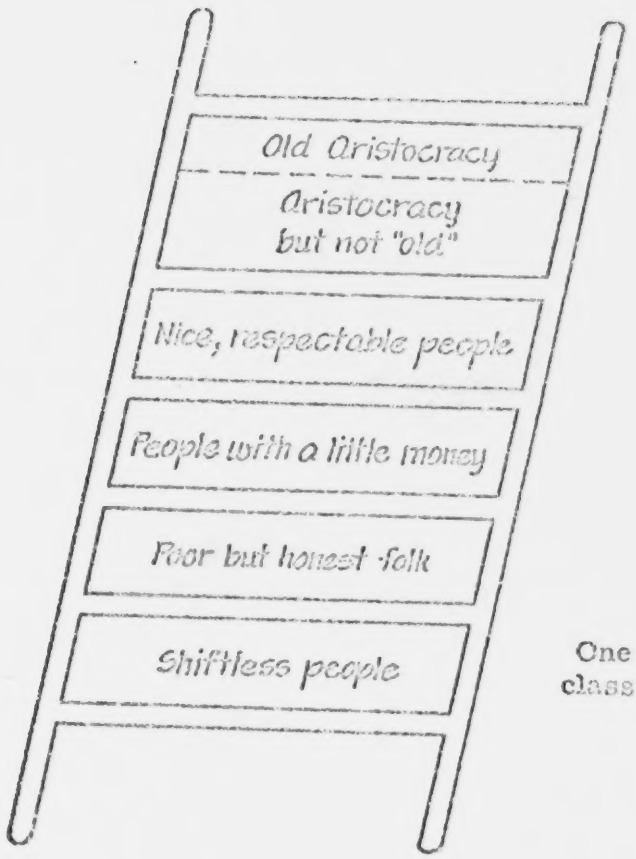
"No one can become a scientist who is not driven by a primary urge for discovery, who is not the ardent suitor of a hidden beauty. Somewhat romantically, scientists can be likened to a company of knights dispersed in search of sleeping princesses, all of whom are more or less distantly related. The spirit of the quest is essential to the making of a scientist, and forms a bond between scientists."

8. _____ A. There is an ascending order of difficulty in the sciences and this appears to be linked to the ability to describe a process in exact, quantitative terms.

_____ B. The more people associate with one another under conditions of equality, the more they come to share values and norms.

_____ C. C. P. Snow has advanced the thesis that there is a deep rift between the scientist and the humanist.

_____ D. Values refer to those things (objects, ideas, or experiences) to which we attribute worth.



One view of social ranks or classes in an American community

9. _____ A. A social class consists of a stratum of people with roughly similar ranking in a particular community or society.

_____ B. The greater the specialization in a society, the greater the number of classes or ranks recognized within the society.

_____ C. The values most highly prized in a society tend to be taken as the central bases of the system of ranks within the society.

_____ D. A classic study of social ranks in the United States was conducted in Newburyport, Massachusetts.

A generation ago, the great leader of India's Untouchables, B. R. Ambedkar, asked Gandhi: "How can I call this land my own homeland wherein we are treated worse than cats and dogs, wherein we cannot get water to drink?" Yet gradually, very gradually, Untouchables have begun to speak of India as their nation. And so it must be for all the other "untouchables" of Asia, if the great Asian peoples are to acquire a real sense of loyalty to nation and eventually to the ideal or order.

10. _____ A. In theory, Indian law has done away with the caste system.

_____ B. Untouchables are members of the lowest classes in India whose touch is an impurity to members of the higher classes.

_____ C. Asian nations present a vast, graduated racial profile, from the blonde ethnic Russians of bleak Sinkiang through the coal-black Tamils of India and Ceylon.

_____ D. The lower classes are able to improve their relative position, even in a caste system.

This society of citizens experimenting and innovating in all the arts of free government was in its own day "the education of Hellas" and has remained ever since the education of the West.

Wherever a comparable outburst of native genius has occurred, in Renaissance Italy, in France's "Great Century," and, for the civic and industrialist arts, in Victorian England, there has been no need to ponder about excellence or seek out its sources. The communities were quite simply pre-eminent and mankind beat a path to their door.

11. _____ A. The success of a civilized society will be largely judged by the creative activities of its people in the arts, humanities and sciences.

_____ B. The Peace Corps refers to talented and dedicated young Americans who are cooperatively waging "war" against illiteracy, hunger and disease in the under-developed countries.

_____ C. The major single source of cultural change is borrowing through cultural contact.

_____ D. In Russia, a society of peasants has crossed from the wooden plow to the atomic pile in little more than one generation.

12. _____ A. One way to determine if a law will be upheld is to determine if most people uphold the purpose of the law.

_____ B. In the United States, there tends to be proportionately more crime in the cities than in rural areas.

_____ C. In the nation last year an average of eight police officers out of 100 were assaulted while performing their duty.

_____ D. Justice is rendering to every man what is due him.

The heart of the problem of relief costs versus birth control lies in the fact that, for the most part, women who can least afford babies have more of them than women who can afford them, students of population trends say. Moreover, in most nations now getting United States aid, the birth rate is highest among the poorest.

13. _____ A. A survey of number of children per family can provide a series of tables showing how birth rates vary by families of different classes.

_____ B. In January of 1965, New York City health officials began offering family-planning services at clinics in slum areas.

_____ C. Poor families usually have more children than wealthy families do.

_____ D. Birth rate refers to the number of births per 1,000 of population.

"Did you ever teach a cat to sit up and beg? Four steps are conspicuous in this act of learning. The drive is hunger. The cue is a piece of meat held well above the cat's head. The first response is an eager reaching, but the reward must not be given until the animal sits erect on its haunches, paws hanging down. I taught Puffy in twenty minutes flat--though I admit she is a smarter cat than most--and she now sits up politely for anything she wants--dinner, a drink of water, to go out of doors, to have somebody play with her."

14. _____ A. A learned response can be drawn forth not only by the cue associated with it during learning but also by a variety of similar cues.

_____ B. Cues consist of those aspects of a situation that suggest specific behavior to the individual.

_____ C. The Institute of Human Relations at Yale University performs learning experiments with animals.

_____ D. Experimentation with simple, easily observable changes in animal behavior permits strict control of pertinent factors.

Early Starter--A child who shows an ability to draw should be encouraged to draw the things he sees.

15. _____ A. Craftsmanship is the essential tool of expression.

_____ B. One standard of artistic sensitivity is an awareness of the hidden structure in things seen, heard, or felt.

_____ C. Only 2 per cent of the American population is an audience for serious music.

_____ D. Children who develop skills more quickly than their peers, are likely to remain superior at subsequent ages.

Since the invention of the steam engine most factory managers had regarded workers as "hands"--a part, and on the whole an unreliable part, of the cost of production. "Labor" was a commodity, to be bought and sold like pig iron. Sometimes, by way of contrast, a paternalistic manager treated his workers like little children, to be given candy and petted.

The Hawthorne experiments broke down these illusions and proved that the way to make workers work hard and willingly lay in two basic and allied principles: First, make the worker realize that his work is important, and that he is important. Second, accept the fact that a factory is part of society. Under the factory roof society must function in its accustomed ways. Bands and teams and groups will form. They must be allowed for, respected, and if possible utilized.

16. _____ A. The first Hawthorne experiment was conducted in one small room of a large factory in the town of Hawthorne, near Chicago.

_____ B. The purpose of the Hawthorne experiments was to determine the effect on production of various changes in hours, wages, rest periods, and so on.

_____ C. By experiment is meant any investigation that includes manipulation or control of some factor by the investigator and systematic observation of the result.

_____ D. The more congenial the organization of informal groups on the job, the higher the job satisfaction.

The Japanese people who came to America to settle on the West Coast had centuries of civilization back of them. However, their civilization was not Western civilization, not Christianity, not Anglo-Saxon culture, and above all, not the English language. By 1940, however, they were well on the road to making the adjustment; to becoming "acculturated," as the anthropologists say. Their children were at home in both worlds.

When Pearl Harbor was attacked by Japan in December of 1941, life for Japanese-Americans instantly became more difficult. Within three months after Pearl Harbor, Manila and Singapore both fell to Japan and when a Japanese submarine shelled Santa Barbara, California, in late February of 1942, American authorities felt that the limit was reached. On March 18, 1942, President Roosevelt created the War Relocation Authority to handle the mass evacuation of West Coast Japanese-Americans to special inland camps.

17. ____ A. During World War II relocation centers for Japanese-Americans were guarded by the Army and administered by the United States Indian Service.

____ B. Becoming acculturated means learning and valuing the accepted ways of behaving of another culture.

____ C. People can learn the expected ways of behaving in a society without being accepted by a society.

____ D. The relocation centers for Japanese-Americans approximated laboratory situations where enforced conditions prevailed and measured observations were carried out.

Television will not seriously affect the brains or the interests or the reading of people with a shred of taste, discrimination or intellectual curiosity. In the long run, education outweighs escapism. There is no substitute for that marvelous, unique experience--reading. One reads alone, and in so doing one calls upon the inner resources of the self. No other medium offers the very special delights and rewards of print.

19. _____ A. Attitudes toward the mass media seem to go beyond the content of the media, the attitudes grow partly out of the esteem in which the media are held.

_____ B. A television program is often watched by 20 to 40 million Americans.

_____ C. The gross numbers of people who watch a television program are a poor measure of the quality of the program.

_____ D. Reading refers to the interaction between a person and printed words.

"I should have been a Chaplain," the dying man said in a faint voice without opening his eyes. "I could have, you know. I am an ordained minister. I never should have fooled around with the Infantry. My wife told me."

"You boys want to pray with me?" the Lieutenant said, his eyes still closed. "Our Father Who art in Heaven, Hallowed by Thy Name."

"We can't, Sir" Dale interrupted politely. "We got to get going. The Captain's waitin on us."

"All right," the Lieutenant said, still without opening his eyes. "I'll do it myself. You boys go on ahead. Thy Kingdom come, Thy Will be done, on earth as it is in Heaven. Give us this day our daily...."

20. _____ A. Discipline in the army consists of a tiring physical ordeal and continued repetition of acts.

_____ B. Recourse to prayer under combat conditions is common among American soldiers, especially when the going is toughest.

_____ C. According to a survey made in 1955, the officer in the armed services ranks just below the public school teacher and above the farm owner.

_____ D. Considerable opportunity for the observation of human behavior under stress is provided by the conditions of combat.

Number of United States divorces
per 1000 existing marriages, 1860-1956

Year	Number
1860	1.2
1880	2.2
1900	4.0
1920	7.7
1940	8.7
1956	9.3

21. _____ A. Divorce refers to the termination of a marriage by legal means.

_____ B. The long-run trend in divorce rates is upward.

_____ C. In 1964, close to 400,000 couples were divorced in the United States.

_____ D. Divorce statistics in the United States are often inaccurate because not all of the 50 states cooperate in securing and reporting this information.

When it comes to serving, the women of the church know how to pass "the cup of cold water" as well as the meat and potatoes.

A Christian Education Committee met to discuss the results of a questionnaire. Selected members of the congregation had been asked to indicate their understanding of what the church is, and what areas of study are needed. As a result of that meeting two women wrote a study course on "Prayer." Fifty women came to the classes and brought their husbands. A small group of women studied theology. Excited by the current world-wide discussions of religion, several women began an interfaith study group, without benefit of clergy.

22. _____ A. Religious activity includes concern for, and effort in, all corners of human existence.

_____ B. Innovation in religious activity can often be stimulated by cutting loose from the shackles of the way things have always been done.

_____ C. Just the stuffing of envelopes by volunteer women saved one church five hundred dollars a year in secretarial help.

_____ D. In the United States, participation in organized religious activity is higher among women than among men.

The role of law enforcement in the current strike has been a source of controversy. After a railway bridge was burned, two coal-screening plants were blasted, and a nonunion operator's home was riddled by gunshot.

Residents of several counties demanded that the National Guard be sent in to keep order. The Governor refused, saying, "I can't send troops against men whose only sin is wanting a living."

The role of the County Sheriff (himself a coal operator) is also controversial. Though he denies that his deputies are used as guards or strikebreakers, he admits to having seventy-two deputies, only four of whom are paid by the county.

23. _____ A. In community conflict, the dangerous elements drive out those who would keep the conflict within bounds.

_____ B. Today 160,000 miners produce as much coal as 700,000 did twenty-five years ago.

_____ C. A strike refers to a union's attempt to halt production by withholding the supply of labor.

_____ D. An account of the situation referred to above would be considered objective if, and only if, another competent observer could follow each step of the investigation as though he had been there.

Total Public-School Enrollment

	Whites	Negroes	Negroes in Public Schools with Whites
Alabama	527,000	280,000	0
Arkansas	320,000	109,000	250
Florida	917,000	219,000	1,168
Georgia	669,000	328,000	44
Louisiana	452,000	297,000	107
Mississippi	297,000	282,000	0
North Carolina	802,000	340,000	901
South Carolina	361,000	250,000	0
Tennessee	671,000	161,000	1,817
Texas	1,952,000	310,000	8,700
Virginia	679,000	221,000	1,230
Total	7,647,000	2,803,000	12,217

Basic Data: Southern Education Reporting Service, 1962

24. _____ A. In 1962, four tenths of one per cent of the South's Negro public school pupils were in classes with whites.

_____ B. By discrimination is meant unfavorable treatment of a minority group.

_____ C. If a minority group is defined as a group which is the object of discrimination from the dominant groups, then a good third of the United States population consists of minority groups.

_____ D. Social changes imposed on a society from outside are especially likely to be resisted.

"There were thousands of Kantoreks, all of whom were convinced that there was only one way of doing well, and that was theirs ... The idea of authority, which they represented, was associated in our minds with a greater insight and a manlier wisdom. But the first death we saw shattered this belief .....

While they continued to write and talk, we saw the wounded and dying. While they taught that duty to one's country is the greatest thing, we already knew that death-throes are stronger. .... We distinguished the false from the true, we had suddenly learned to see. And we saw that there was nothing of their world left."

25. _____ A. The classical conception of the Fatherland held by many Germans became during World War I a renunciation of personality.

_____ B. During World War II many infantrymen developed disabling neurosis somewhere between 200 and 400 aggregate days of combat.

_____ C. Brief intervals of relief from frontline duty may be employed to postpone personal breakdown in combat.

_____ D. The more that men are exposed to actual combat in battle, the less is their conviction that ideals being fought for are worth the cost.

For migrants, farming is a cradle-to-the-grave occupation. All ages work in the fields, then move on to the next harvest. Their average earnings are so far below the least of family needs that learning to pick is a much more urgent part of a child's education than reading or writing.

A recent survey by the United States Public Health Service showed nothing changed since the misery of the dispossessed "Okies" and "Arkies" shocked the nation three decades ago--migrants still living in chicken coops, drinking ditch water, and cooking in battered oil drums.

26. _____ A. Occupational choice is much more restricted among the poor than among the wealthy.

_____ B. There are approximately two million migrant farm workers in the United States.

_____ C. The migrant farm workers are reapers without roots in the soil they tend.

_____ D. Immediate need is an important limiting factor in vocational choice.

Perhaps the most important contributions of Christianity to the cause of the free society today are teachings so commonplace, and so notoriously violated, that sophisticates may overlook them. Simplest of all is the gospel of charity or love. It is associated with other simple ideas that have helped to make a world of difference in Western history, notably the idea of the sacredness of the person--a basis for our Western claims to rights not commonly enjoyed in other societies.

Yet it is by no means clearly desirable that there be one religion for our One World. Those in particular who cherish the ideals of a free society should welcome religious diversity, and might well fear any trend to uniformity in belief as much as the trends to standardization in culture and totalitarianism in political life.

27. _____ A. In their work, behavioral scientists reject all claims to the absolute truth, or the necessity of such belief.

_____ B. The problem of differing religious groups existing side by side is actually a very old one.

_____ C. The social gospel refers to the Christian concern with social and political problems.

_____ D. Religious values influence, and are influenced by, the basic values of the society.

Our class system is starting to bear a resemblance to that which prevails in the military services. In the services there are, of course, status differences between a private and a corporal and between a lieutenant and a captain. The great division, however, is between officers and enlisted men, with only quite limited opportunities for acquiring, while in service, the training necessary to pass from one division to the other.

In the case of our class system in the United States, the training required for higher-class status is a college education.

28. _____ A. In 1958, the students at Princeton University were predominantly public-school graudates.

_____ B. The higher young people go in the educational system, the better their chances for higher-class positions.

_____ C. Two of the best predictors of social status in the United States are education and occupation.

_____ D. The diploma elite consists of those who have gone to college, and who are now successful in the professions or business.

The Negro, among others, "discovered" California after World War II. Negroes flocked to the Bay Area and Los Angeles by the hundreds of thousands and, although they have enjoyed nothing like equality in employment, an improvement over their former lot is obviously one of the attractions.

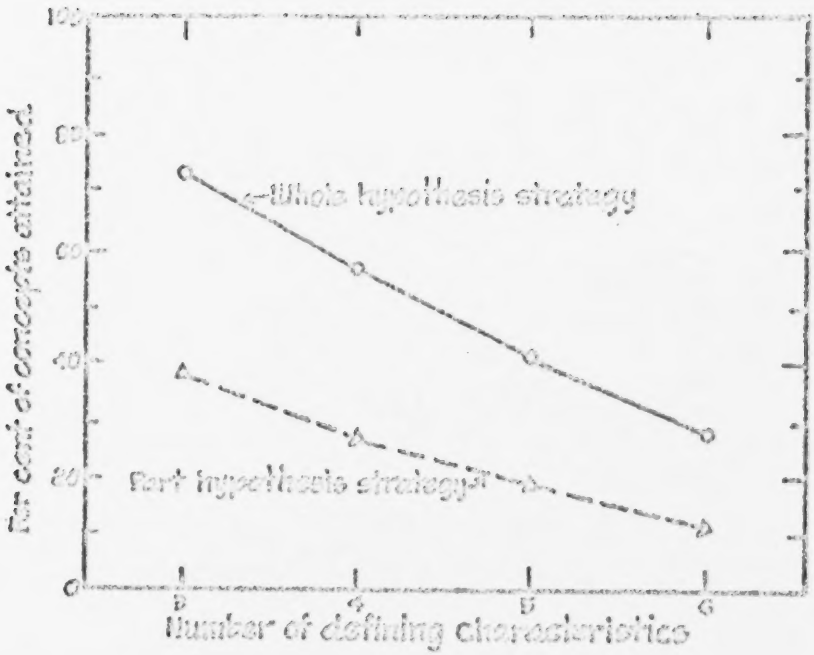
The Negroes also came seeking what the new intellectuals and almost all of the previous "waves" had sought--a superior education for their children. California's school system has probably been one of the state's greatest "secret" attractions since the eighteen-nineties.

29. _____ A. California has surpassed New York as the most populous state in the Union.

_____ B. The new intellectual refers to the highly trained person, the possessor of an advanced degree.

_____ C. On logical grounds alone, migrants may be viewed as more adventuresome and more changeable than the average.

_____ D. Castes and classes that achieve some upward mobility tend to want more.



The percentage of tasks begun with whole or part strategies that are solved in relation to the number of characteristics comprising the concept

33. _____ A. People do not follow ideal rules or strategies in handling examples of a concept.

_____ B. In concept-attainment experiments, subjects follow either whole or part strategies.

_____ C. A concept consists of an equivalence class, a group of things amounting to the same thing.

_____ D. Whole strategists were able to attain almost 80% of the concepts having three characteristics.

Mrs. Adams to Mrs. Beck: "Where is Mrs. King today? Is she ill?"

Mrs. Beck (who does not like Mrs. King) to Mrs. Clark (who does): "I hear Mrs. King is ill. Not seriously, I hope?"

Mrs. Clark to Mrs. Ellis: "It may be that Mrs. King is seriously ill. I must go right over and see her."

Mrs. Ellis to Mrs. French: "Mrs. King is seriously ill. Friends and relatives have been called to her bedside."

Mrs. French to Mrs. Gregg: "What's the latest news about Mrs. King? Is she dead?"

Mrs. Gregg to Mrs. King. "I just learned of your death. Now who started that?"

Mrs. King: "There are many who would be glad if it were true!"

31. _____ A. A rumor is an unauthenticated story that is widely circulated.

_____ B. Rumors tend to be passed along by people who find the rumors acceptable.

_____ C. Rumor was a problem of grave national concern in the United States during the tense war years of 1942 and 1943.

_____ D. The interaction of intellectual and emotional processes may be observed in the changes which a rumor undergoes in the course of transmission.

"To learn real human nature you have to go among the people, see them and be seen. I know every man, woman, and child in the Fifteenth District, except them that's been born this summer--and I know some of them too. I know what they like and what they don't like, what they are strong at and what they are weak in, and I reach them by approachin' at the right side.

For instance, here's how I gather in the young men. I hear of a young feller that's proud of his voice, thinks that he can sing fine. I ask him to come around to Washington Hall and join our Glee Club. He comes and sings, and he's a follower of Plunkitt for life. Another young feller gains a reputation as a baseball player. I bring him to our baseball club. That fixes him.

..... I don't trouble them with political arguments. I just study human nature and act accordin' ....."

32. _____ A. A one-way glass can shield an observer from a group; a microphone can catch all the talk in a group, and a tape recorder can preserve it.

_____ B. In ordinary situations, informal personal appeal is consistently more effective than radio, television, or newspapers.

_____ C. Local opinion leaders are those who have face-to-face contacts with the public and whose influence is personal.

_____ D. The National Training Laboratory, concerned with the study of group behavior, operates each summer at Bethel, Maine.

"Bob Jones is one of the younger of nine children. His father is janitor for the largest office building in town. ... The Joneses live in Boxtown, a section of town on the 'wrong side of the railroad tracks.'

..... When Bob entered school, the teachers made such comments as, 'Well, here is another Jones. Will they never stop coming?' The teachers expected little from Bob, and they didn't get much but trouble. . Now in the fifth grade, Bob is twelve years old, having repeated two grades. He is big for twelve and strong and he can, or at least everyone thinks he can, lick any boy in the school. To his classmates he is all that is tough, fearless, and independent. To himself he is just doing what he has learned from his older brothers--he knows how to look after himself."

33. _____ A. Estimates of the view of the world held by groups of people are often based on sample surveys of their opinions, attitudes, or beliefs.

_____ B. Boston's upper class was carefully analyzed by John Marquand in his novel titled "The Late George Apley."

_____ C. Social mobility consists of upward and downward movement by individuals across social-class lines.

_____ D. As a person learns to identify himself with a class position, his view of the world becomes further limited by his class boundaries.

Optical art seeks as its model those sciences, especially physics, that are creating the new world. At the very least optical art is doggedly scientific in intention as well as in meaning. It is certainly as impersonal as art can get. Optical artists avoid the quick, free brushstroke that is the personal touch in painting. The surfaces of the new paintings usually look as smooth and machine-made as the artist can make them.

34. _____ A. Optical art is an objective exercise strongly suggestive of the laboratory.

_____ B. Societies with complicated organization and division of labor have complicated artistic products.

_____ C. Optical art emerged as a competitor to popular art in 1964.

_____ D. Like the scientist, the optical artist attempts to control his responses to the problems imposed by his experiment.

The important difference between the terms "caste" and "class" as we are using them is a relatively large difference in freedom of movement between groups. This difference is foremost in marriage relations. Intermarriage between Negroes and whites is forbidden by law in many states of the Union and even where it is not legally forbidden it is so universally condemned by whites that it occurs extremely infrequently. The ban on intermarriage is one expression of the still broader principle, which is valid for the entire United States without any exception, that a man born a Negro or a white is not allowed to pass from the one status to the other as he can pass from one class to another.

35. _____ A. In the United States, less than 1 per cent of marriages are interracial.

_____ B. The American definition of "Negro" has its significance in making the caste line absolutely rigid.

_____ C. In the United States, marriage generally takes place between people whose race is similar.

_____ D. A caste refers to a status which is closed and rigid.

Every day in many ways government bureaucrats make decisions that affect our freedom, our security, and our welfare. The Board of Governors of the Federal Reserve Board issues a ruling that affects the size of the down payment we must make on a new home. The Rural Electrification Administration decides to bring electricity to farmers in one part of the country but not in another. The Defense Department decides to close veterans' hospitals in some communities, but not in others. The Justice Department prosecutes public-school segregation in a particular state. The National Science Foundation supports course improvement in the natural sciences but not in the humanities.

36. _____ A. Government employees are unlikely to take extreme political positions.

_____ B. More than half of the 2 1/2 million civilian employees of the federal government work for the Army, Navy, or some other war agency.

_____ C. The government bureaucrat is a postman, teacher, policeman, forest ranger, peace corpsman, and nuclear physicist.

_____ D. The number of people one man can supervise effectively depends on the personality of the supervisor, the nature of the work and many other factors.

The values which played the greatest part in determining the order of preference among nonskilled jobs were regularity of employment and the relative absence of physical and emotional strain. These values stem primarily from the nature of work in an automobile factory rather than from the tradition of opportunity.

With their experience of regular seasonal layoffs and otherwise erratic employment, automobile workers have translated the traditional emphasis upon promotion to better-paying jobs into a concern with steady work. They have come to look at wages not only in terms of hourly rates, but also with an eye to how much one can earn over an extended period of time. In the long run, they feel, a steady job will provide a better income than an irregular job that pays higher hourly rates. "I've got the best job in the shop," boasted a yard-maintenance man. "I work fifty-two weeks a year. I don't get paid as much but at the end of the year I'm better off than the guys on production."

37. _____ A. The American Dream refers to the tradition of unlimited opportunity and success.

_____ B. The social scientist can assume the role of his subjects in order to become sensitized to the context of his investigation.

_____ C. In the United States, piece-rate systems are least effective for the lowest level of workers.

_____ D. Layoffs for automobile assembly workers during 1946 and 1947 were due primarily to the postwar steel shortage.

Because of the similar impact of major historical events upon an age group facing similar problems (war, depression, automation, and the like), generations may differ in their political attitudes and behavior. Classified in this way, the population may include several distinctive political generations.

38. _____ A. Young people tend to hold political preferences different from those held by older members of their own class or ethnic group.

_____ B. The "unwanted generation" refers to those who came to maturity in the depression of the thirties, and who sought jobs in a bankrupt job market.

_____ C. In 1954, more than twice as many American adults, 15 per cent, as eighteen to twenty year olds, 7 per cent, favored isolationism.

_____ D. Political behavior may be studied by analyzing the relationships suggested by a general model for learning.

Let us emphasize that all mate-selection systems press toward homogamous marriages as a result of the bargaining process. That is, in general, "like marries like"--with reference to a wide variety of traits. If the girl comes from a wealthy family, her family associates with other wealthy families, and by her wealth she can command a good "price" in the marriage market. That is, other wealthy families will find her an acceptable bride for their sons. Similarly, if her family is high in prestige or power, other families at that level will consider her acceptable, and her family need not ally itself with lower-ranking families in order to find an acceptable groom.

39. _____ A. Intermarriage is the best index that one family considers the other approximately equal socially or economically.

_____ B. In a study of high-school dating conducted in 1962, 61 per cent of all "dates" belonged in the same social class and 35 per cent in an adjacent class.

_____ C. Dating is a part of the socialization experience which has as an important function the selection of a mate.

_____ D. People tend to marry people who are in various social ways like themselves.

It is possible to reconstruct a good deal about the process that took place when the Anasazi (ancestors of the present day Pueblo Indians) borrowed pottery techniques from the Mogollon (one of the principal prehistoric cultures of the American Southwest).

The Anasazi apparently observed pottery making in the process but were not technically instructed, possibly because of a language barrier. It may also have been that the men saw Mogollon women making pots and reported back to their wives and sisters. The reason we know there couldn't have been instruction is because the Anasazi pottery, instead of being red--as the Mogollon pottery was, turned out gray, showing that it was fired in a reducing atmosphere without oxygen.

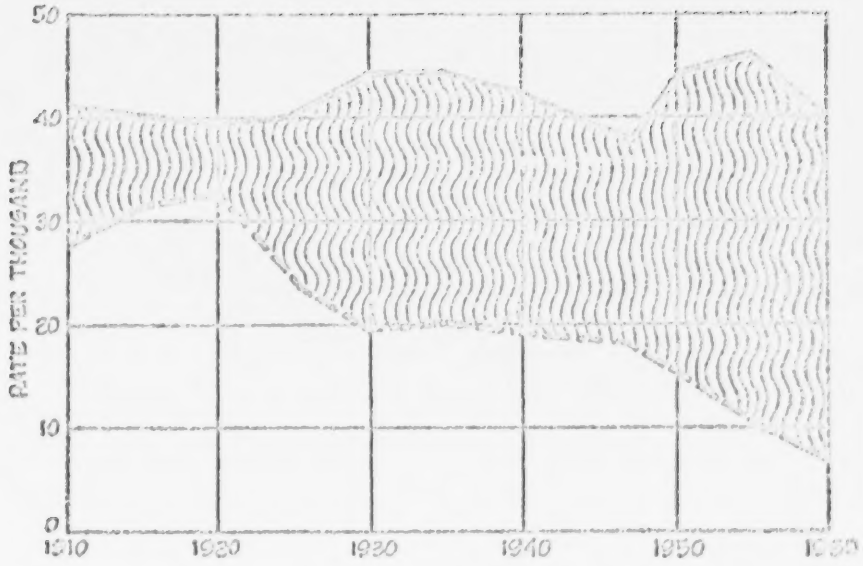
By A. D. 800-900 the contact between the two peoples apparently was a little closer and some actual instruction took place, at least the Anasazi become more technical in their imitation of the Mogollon techniques. That is, they learned how to fire red pottery.

40. _____ A. The more the contact between two cultures, involving some representative groups, the faster the learning of the external culture.

_____ B. Pottery is a good topic for examination of change, because pottery fragments are virtually indestructible.

_____ C. The initial contact between the Anasazi and the Mogollon occurred at about A. D. 500-600.

_____ D. A primitive people's distinctive ways of making pots, houses, and stone tools are called its technology.



Rate of Increase in Taiwan's population (colored area) has grown because the birthrate (solid colored line) has remained high while the death rate (broken line) has fallen.

18. _____ A. Birthrate refers to the number of births per 1,000 of population per year.

_____ B. Birth controls are less likely to be accepted than are measures for prolonging the life span.

_____ C. The effectiveness of a family planning program may be studied by a before-and-after survey of a random sample of women of childbearing age.

_____ D. Any change in birthrate depends on individual decisions by large numbers of husbands and wives.

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Appendix C

The Social Science Curriculum Study Center

Project Description

THE SOCIAL SCIENCE CURRICULUM STUDY CENTER
UNIVERSITY HIGH SCHOOL, UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS

TITLE OF PROJECT: Sequential Social Studies Courses for the Secondary School

Objectives:

The Social Science Curriculum Study Center at University High School, University of Illinois, Urbana, has as its objective the development of the first three courses in a sequential junior-senior high school social studies program, grades eight, nine, and ten. These three courses for the secondary school social studies are designed to provide learning experiences that help students develop understanding of: (1) the structure of man's social order and how this social order relates to the individual in his own and in other selected cultures in time and place; (2) the historical development of selected cultures with emphasis on the process of development, and factors that impede and promote development; (3) the dynamic nature of social, economic, and political institutions; (4) man and social change; (5) cultural diversity.

Procedure:

The development of the three basic social studies courses emphasizes the selection, in consultation with academic

specialists, of major concepts and generalizations basic to understanding man's relationships to his social, economic, and political institutions at various points in time and in selected western and non-western cultures including our own. In developing the new instructional materials, priority is given to achieving maximum involvement of the learner so he arrives at an understanding of the concepts and generalizations INDUCTIVELY and develops skill in social analysis. The new course materials introduce the student to the methodology of social scientists and historians as they conduct their investigation of cultures studied in the new materials.

Instructional materials appropriate to teaching the concepts, generalizations, skills in social analysis, and attitudes are selected using the best of existing materials and developing new materials to achieve the objectives of the new social studies program. Evaluation materials and techniques appropriate to measuring the degree to which content, materials, and procedure fulfill the objectives of the proposed social studies program are developed concurrently with the new instructional materials and the result thereof is used as a basis for making successive revisions of the course materials.

The procedure followed in the development of each of the three courses involves five stages:

1. Identification of concepts, generalizations, skills of social analysis, and attitudes in cooperation with academic specialists in art, cultural anthropology, economics, geography, history, political science, regional area studies, sociology, psychology, and teacher education.

2. Preparation of the new course materials and evaluation instruments which are taught first in the laboratory classes at the University of Illinois High School.

3. Revision of the new course and evaluation materials and preparation of a teacher's manual with tryout in a small number of selected pilot schools whose teachers have benefit of consultant help by the project staff including orientation to the new materials in summer institutes.

4. Second revision of the new course materials and evaluation instruments with tryout in a larger number of cooperating public schools with continued teaching in laboratory classes at the University of Illinois High School.

5. Further analysis of selected data from trial in University of Illinois High School, pilot, and cooperating schools and publication of the new course materials.

Evaluation:

Evaluation materials are viewed as an integral part of the new course materials. Evaluation specialists, in consultation with staff members, have identified major understandings, situational perspectives, and attitudes posited as course objectives. A pretest, reflecting these central course objectives has been constructed and administered. A parallel

form of the pretest has been developed and administered as a post-test following course instruction. Data derived from the pre and post-test administrations, particularly item analysis data, provides partial evidence relevant to growth in the achievement of course objectives.

Additional evaluation efforts are being directed to the development of unit tests by staff members and cooperating teachers. The function of the unit tests is to provide relatively immediate feedback concerning unit objectives. Additional course dimensions will be assessed by the administration and subsequent analysis of a Test of Cognitive Preference in the Social Sciences and a Test on Understanding Social Science. The Test of Cognitive Preference in the Social Sciences has been developed and administered and a Test on Understanding Social Science is in the developmental stage.

New Courses and Work Underway:

Proposed Course Sequence

8	9	10
Foundation Course I	Course II	Course III
Man and His Institutions (The Family, the Economy, the Political System)	Emerging Civilization and Western Civilization	Non-Western Cultures & Latin America

11	12
United States History	Economics Government or Sociology or Cultural Anthropology or Geography

Course I:

The Family in Society is the first of three units in Course I followed by units on Man's Economic Institutions and Man's Political Institutions. Beginning with a study of man's social institution, the family, the student examines the American family today using the methods of the social scientist wherever appropriate. Examining the New England colonial family representative of an earlier period in time, he learns to identify evidence of change. Reasons for change and consequences for the family and for the larger society are analyzed and checked with selected data. Next follows materials on another type of family organization, namely, the extended family. Here the student is introduced to the family system in a village in North India. Using selected primary sources, including anthropological reports, slides, a film, tape recorded interviews with residents of the village, students identify similarities and differences, the reasons for these similarities and differences,

and the consequences of this kind of family organization for the Indian family and society. Basic concepts introduced and developed in the family unit include socialization, role, function, and social change.

The same general pattern is followed in the units of Man's Economic and Political Institutions starting first with our own society in the present, then in an earlier period of time, and finally models of other selected societies are introduced. Economic concepts introduced and developed in the unit on Man's Economic Institutions include human wants, economic resources, scarcity, allocation of productive resources, methods of organizing economic activity. Concepts developed in the political unit include political resources, political power, and authority. Materials that provide for the development of these and other essential concepts basic to understanding man's social order, equip the individual student with the analytic tools to critically examine the structure of his own and other selected societies in time and place.

Course II:

Building on the concepts and generalizations introduced in the three units of Course I, the emphasis in Course II is on those historical developments that affected all mankind. Selected

simple cultures, as well as advanced regional cultures in Eurasia and the New World are studied. In all instances the emphasis is on the PROCESS OF DEVELOPMENT whereby man, coping with his natural environment, develops established ways of solving the persistent problems of socialization, scarcity of productive resources relative to human wants, and assignment of political power.

The first unit of Course II deals with Man and His Physical Environment. Concepts and generalizations drawn from geography, in the main, are used as analytic tools to understand man interacting with his physical environment.

The second unit introduces material on the nature of culture and the emergence of civilization using as models Mesopotamia and Peru

The third unit representing one-half of the Course II material introduces the student to Western European Civilization, the advanced culture that emerged in the western portion of the Eurasia landmass. The emphasis, again, is on the concepts and generalizations introduced and developed in Course I and in the first and second units of Course II. These concepts and generalizations become increasingly operative as tools of social analysis when the student uses them in new situations to extend his understanding of the structure of European civilization in

each of six periods in Europe's development--the High Middle Ages, the Late Middle Ages, the Age of Absolutism, the Age of Revolution, Europe in the Nineteenth Century, and Europe Today.

Course III:

The third course as presently projected develops selected regional areas including the Soviet Union, China, India, the Middle East, Sub-Saharan Africa, and Latin America. The approach is to examine, first, the natural environment within which man over time has interacted and developed a way of life represented by existing economic, political, and social institutions. The concepts of socialization, scarcity, and power introduced in Course I and used as analytic tools in Course II are used again for analysis in Course III when students examine the structure of each of the regional cultures, compare and contrast existing institutional arrangements and value systems with each of the other regional cultures and with our own, examine the factors that promote and impede change, and the consequences thereof for man in each of the regional areas and for all of mankind.

Varied instructional aids including student and teacher manuals, selected readings, slides, filmstrips, recordings, charts, transparencies, pictures are being selected, developed and organized at the Social Sciences Curriculum Center for all the new course materials.

Staff:

Elizabeth Berger, Research Assistant with responsibility for assisting in the preparation and teaching of the new materials in Courses II and III.

Ellen Johnson, Research Assistant responsible for assisting in the preparation and teaching selected portions of the new materials in Courses I, II, and III.

Evans Mank, Research Assistant responsible for developing and teaching the new materials drawn from geography in Courses II and III and teaching Course I.

Roland Payette, Research Associate, responsible for developing evaluation materials and techniques in cooperation with staff members for the new instructional materials and analyzing the results of the tryout of materials in University High School and cooperating schools.

Rozella Smith, Research Associate, in charge of the selection, development, and organization of project materials.

J. Thomas Hastings, Director, Center of Instructional Research and Curriculum Experimentation, University of Illinois, Supervisor of the evaluation staff.

Ella C. Leppert, Project Director, participating in the developing and teaching of the new materials in Courses I, II and III.

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October 15, 1965

VITA

Roland Francis Payette was born on April 11th, 1926, in Cohoes, New York, where he attended elementary school. He attended high school in Albany, New York. As a member of the United States Navy during the period 1944 to 1946, he was stationed at Miami University of Ohio in a Navy V-12 Unit. He received his A.B. degree from Miami University in 1948. In 1951 he received an M.A. degree in Political Science from the University of Cincinnati. From 1952 to 1954, he was a social studies teacher at Woodward High School in Cincinnati, Ohio. He was a research assistant at the Bureau of Educational Research, University of Illinois from 1954 to 1957 and then served as Curriculum Coordinator for the Elmwood Park Public Schools in Illinois from 1957 to 1959. From 1959 to 1964, he was a test specialist and curriculum researcher for the Educational Testing Service in Princeton, New Jersey. Since 1964, he has been a research associate on the staff of the University of Illinois Social Science Curriculum Study Center.